PLANNED INFORMATIONAL AND SUPPORTIVE NURSING INTERVENTIONS TO REDUCE THE EFFECTS OF TREATMENT STRESS IN BURN PATIENTS

by

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ABSTRACT

Planned Informational and Supportive Nursing Interventions To Reduce the Effects of Treatment Stress in Burn Patients

Stress associated with treatments is a potential cause of anxiety in the burn patient. This descriptive study examined the emotional reactions to the effects of treatment stress in five adult burn victims during hospitalization.

The purpose of the study was to investigate the effectiveness of an instructional program providing treatment information followed by psychological support in reducing the effects of treatment stress in burn patients. Identification and accumulation of information about anxiety producing stressors during hospitalization as perceived by the burn patients was one outcome of the study. The instructional program included an audio-visual teaching program depicting various treatments in burn care followed by a discussion between the investigator and the patient.

The design of the study was a one group pre-test, multiple post-test approach. Several variables within the group were compared from two perspectives. Correlational statistics were applied to indicate the relationship of these variables in the reality of the ongoing situation of burn care.

Briefly, the null hypotheses challenged were:

1. There is no measurable change in trait anxiety over unit time .....  
2. There is no measurable reduction of state anxiety over unit time .....
3. There is no measurable increase in hours of sleep over unit time.

4. There is no measurable reduction in expressed need for analgesic and sedative medication over unit time.

5. There is no measurable indication of increased reported well-being over unit time.

6. There is no correlation between the nurses' assessment of the patients' trait anxiety level and the trait anxiety measured by the State-Trait Anxiety Inventories.

7. There is no correlation between the nurses' assessment of the patients' state anxiety and the state anxiety measured by the State-Trait Anxiety Inventories.

Date collecting instruments measured the variables of objective and subjective stress. Such variables were state and trait anxiety, quantity of sleep and need for medication.

Analysis of the data revealed that there was a distinct trend to reduction in state anxiety and little change in trait anxiety during hospitalization. However, there was no measurable increase in the hours of sleep and no measurable decrease in expressed need for medication. Patients' comments in the daily diaries, as well as other indicators of the helpfulness of the instructional program and psychological support, were another source of evidence that planned informational and supportive nursing interventions reduced that anxiety attributable to the effects of treatment stress.

Furthermore, there were many anxiety producing stressors during hospitalization as perceived by these patients. Generally, the stressors were associated with burn treatment and patient-nurse relationships. Trends and phases of recovery were seen among all these patients throughout
the entire data collection period.

The findings of the study indicated that even less severely burned patients suffer intense psychological response to burn injury. Planned nursing interventions, provided by a person not responsible for daily physical care, was perceived by the patients under study as reducing that anxiety attributable to the effects of treatment stress.
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Chapter 1

INTRODUCTION

Stress associated with treatments is a potential cause of anxiety in the burned patient. The effects of treatment stress vary among individuals. Every burn patient reacts differently to the stressors in a burn unit and every patient experiences a different level of anxiety. The problem is posed: Would nursing interventions comprised of psychological support and an instructional program providing information about treatments, reduce anxiety in selected burn patients?

The purpose of this study was to investigate the effectiveness of an instructional program providing treatment information and psychological support in relieving the effects of treatment stress for burn patients. Identification and accumulation of information about anxiety-producing stressors during hospitalization, as perceived by the patients, was the other major purpose of this study.

"A burn accident can be described as a moment of carelessness, followed by 30 seconds of acute terror and then a lifetime of disfigurement and disability."¹

Burns are among the most devastating injuries sustained by man. Burns not only affect an individual's physiological state but also his psychological state. Once a burn has occurred, medical therapy and nursing interventions are directed toward restoration and repair of tissues. Life-sustaining measures are paramount. Once they are

initiated, it is usually possible to attend to the psychological process of adjusting to a burn injury.

During the initial few days post injury, efforts are directed toward resolution of immediate problems resulting from the burn injury. Innumerable systemic changes take place, the most important of which is the alteration in fluid and electrolyte balance. Hypovolemic shock, airway obstruction, impaired circulation to extremities distal to circumferential burns are some of the other major problems which may occur.²

Jacoby's³ objectives of burn care summarize priority problems. The prevention and treatment of shock and the alleviation of pain are paramount. Control of bacterial growth on the burn wound and within the body as well as conversion of the open wound to a closed wound are major objectives of a long term treatment program. Preservation of body function and appearance are continuous objectives from the time of admission to a burn unit. Of equal importance, however, is the restoration of the mental and emotional equilibrium of the patient. It is to this last objective that this study is directed.

Serious emotional problems exist in extensively burned patients. The management of these problems is an integral part of overall therapy.


When a severely burned patient is admitted to hospital, he is not only in a state of great physical pain but is also undergoing serious accompanying emotional disturbances. Many of these patients are difficult to manage because of their inability to adjust to their changed physical state and the hospital environment. Clinical experience has demonstrated that emotional factors have considerable influence on the patient's rate of physical recovery.\(^4\)

An emotional state which has been disrupted in burn patients produces anxiety. Anxiety due to fear of the unknown, anxiety due to the possibility of deformity, anxiety due to the stress of treatments, these are all prevalent. Anxiety may overshadow the patient from the moment of his conscious awareness of his accident to months after discharge from the hospital.

The amount of anxiety experienced by an individual is a highly personal matter determined by many factors. The following incident illustrates this point. The investigator was observing two burn baths on a burn unit of a large city hospital. One patient, a 15 year old boy, severely burned with tar to 50% of his body was washing and debriding (removing dead tissue from) his own burns with no overt sign of pain. He crawled around in the tank as if he were enjoying a daily tub bath. The next patient to go into the burn bath was a 50 year old man. He was burned less severely and to a lesser extent than the teenager. He lay rigid on the stretcher being lowered

into the tank. He did not move until asked to, was thoroughly frightened and in obvious pain. The distress experienced by this man was great and it hindered the debridement of his wounds as well as his ability to relax in the warm whirlpool tank. This example illustrates that each individual reacts differently to the effects of treatment stress and every individual experiences a different level of anxiety in similar situations.

Statement of the Problem

The problem is stated as a question.

Does the use of planned nursing interventions, providing psychological support and treatment information, reduce the effects of treatment stress as measured by various indicators of anxiety?

Purposes of the Study

The purpose of this study was to:

1. Investigate the effectiveness of an instructional program providing treatment information and psychological support in relieving the effects of treatment stress.

2. Identify and accumulate information about anxiety-producing stressors during hospitalization as perceived by burn patients.

Null Hypotheses

The following null hypotheses were considered.

1. There is no measurable change in trait anxiety over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support during the course of treatments as measured by the State-Trait Anxiety Inventories.
2. There is no measurable reduction of state anxiety over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support during the course of treatments as measured by the State-Trait Anxiety Inventories and as indicated by the patients' personal diaries.

3. There is no measurable increase in the hours of sleep over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support as measured by the nurses' observation on the sleep record and as indicated in the patients' personal diaries.

4. There is no measurable reduction in expressed need for analgesic and sedative medication over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support as measured by the nurses' observation on the medication record and as indicated by the patients' personal diaries.

5. There is no measurable indication of increased reported well-being over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support as indicated in the patients' personal diaries.

6. There is no correlation between the nurses' assessment of the patients' trait anxiety levels and the trait anxiety measured by the State-Trait Anxiety Inventories.

7. There is no correlation between the nurses' assessment of the patients' state anxiety and the state anxiety measured by the State-Trait Anxiety Inventories.
Significance of the Study

The literature substantiates the problem of anxiety as a variable in the care of burn patients. Very few studies have been specifically designed to study the psychological problems of burn patients. In reviewing the literature on the nursing care of the burned patient, systematic approaches to interventions in this domain, based on assessment of the unique needs of each patient, are lacking.

The research aim, therefore, is to test nursing interventions specifically designed to reduce the effects of treatment stress in burn patients.

Definition of Terms

Anxiety - a persistent feeling of dread, apprehension and impending disaster.\(^5\)

State Anxiety - a transient mood reflecting awareness of an impending unpleasant occurrence at any given moment in time.\(^6\)

Trait Anxiety - a predisposition to the reaction of anxiety to a variety of stimuli and situations.

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\(^5\)Lawrence C. Kolb and Arthur P. Noyes, Modern Clinical Psychiatry (Toronto, Ontario: W. B. Saunders Co., 1973), p.82.


\(^7\)Ibid., p.2.
Burn - loss of continuity of the body surface due to a coagulation and destruction of skin and subcutaneous tissues by thermal changes, including both heat and cold, by chemicals, by electricity and by radiation.  

First degree burn - an erythema of the area involved.  
Second degree burn - destruction of the epidermis with blister formation due to the exudation of plasma from the deeper layer of dermis which elevates the epidermis.  
Third degree burn - destruction of the full thickness of the skin plus any subcutaneous tissues involved. 
Fear - an affective response to an actual current external danger which subsides with the elimination of the threatening situation. 
Instructional Program - an audio-visual aid, in the form of a tape-slide program providing a general orientation as well as information about specific phases of burn care utilized to facilitate the explanations and anticipatory guidance by the nurse.

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9 Ibid., p.577.  
10 Kolb, Modern Clinical Psychiatry, p.41.
Stress - the non-specific response of the body to any demand made upon it.\textsuperscript{11}

Treatment Stress - situational stress arising from burn treatment as measured by various indicators such as the patient's personal evaluation measured on a Likert scale, patient comments, staff observation and the scores achieved on the State-Trait Anxiety Inventory.

**Assumptions**

The exploration of the resolution of anxiety due to the effects of treatment stress in burn patients is based on several assumptions.

The perception of pain, actual or threatened is a prominent source of anxiety.\textsuperscript{12}

A patient who assumes an active role in his physical and emotional care contributes to his recovery and perceives his care as effective.\textsuperscript{13}

Relief of situational anxiety is the nurse's responsibility.

Treatment stress exists in burn patients. The effects of treatment stress in producing anxiety can be measured.


Treatment stress is reflected in sleep patterns and need for analgesic and sedative medications.

Treatment stress can be assessed by subjective observations by the staff.

Treatment stress can be assessed by objective psychological testing with an anxiety scale.

Patients can subjectively evaluate their feelings of pain, anxiety, sleeplessness and fear of treatments.

Staff records reporting a patient's sleep pattern and medication needs reflect treatment stress.

**Limitations**

As an exploratory study, the only intent was to examine variables operating in burn care and generate speculative relationships among the identified variables.

Since sample size was contingent upon availability of those people burned who met the subject criteria, the resultant sample size is small. It was not the intent of the study to generalize the findings to all burn patients.

No inference of causality was intended between the nursing interventions and the reduction of treatment stress.

Internal validity may have been jeopardized due to the effects of history, maturation and instrument decay.

The uniqueness of the daily diary does not lend itself to validity and reliability testing.

Medication records are considered highly valid and reliable.
In many cases, however, it was difficult to ascertain if medication was requested or routinely given.

The nurses' recordings of the patients' sleep was not tested for reliability and validity.

The study of anxiety is difficult at times. The all encompassing nature of pain and the appearance of a burn would further complicate the identification of anxiety levels by those caring for these patients.

Overview of Methodology

The research took place on a burn unit of a large general teaching hospital in Canada from October 1976 to February 1977. Each patient meeting the subject criteria, admitted to the burn unit during the months from October to February, was approached and an explanation of the study given before being requested to participate in the study.

A few days after admission, the patient was assessed in an intake interview. The purpose of the brief visit was to collect information about the patient and his reactions to his care and treatments. The investigator established her role as a nurse specialist studying burn care, not involved in the day to day care, but gathering information on the reactions of burn patients to their treatments. She visited eight times during the period of each patient's hospitalization to answer any questions, provide emotional support as needed and prepare him for new phases in his treatment.

Since each patient is an unique individual, anticipatory guidance and emotional support was an individual process dependent on such things as the patient's background experience, thought patterns, vocabulary and
his ability to understand what is going to happen.

Shortly after admission, the State-Trait Anxiety Inventory (see Appendix B) was administered. Part I of a tape-slide program "Orientation to the Burn Unit" was shown (see Appendix C). This specific section of the tape-slide program and the discussion following were evaluated by means of the evaluation tool for the instructional program (see Appendix D). Also, at this time, the staff nurses began recording sleep and medications in records prepared for this study. (see Appendix E and F). The nurse, caring for the patient, was asked to assess the patient's level of state and trait anxiety and rate her subjective observations of the patient's anxiety level on a Likert scale (see Appendix G). The patient began to keep a daily diary. This day to day subjective evaluation on a Likert scale reported the pain experienced, need for analgesic medication, sleep, personal concerns and well-being. These factors were considered in a composite score to indicate anxiety level for that day (see Appendix H).

During a specified time period of not less than three weeks, appropriate sections of an instructional program were shown to the patient by the investigator. Depending on the treatment the patient was receiving, the appropriate portion of the tape-slide program and the discussion following were evaluated by the patient in a structured interview with the investigator. The State-Trait Anxiety Inventory was administered to the patient at two intervals before a treatment session and a two intervals after a treatment session.

The investigator visited each patient not only at the time of the
administration of the State-Trait Anxiety Inventory, but twice during the course of the study. The purpose of these eight visits was to review and assess daily diary progress, to encourage the patient to verbalize his fears and anxieties as expressed in the content of the diary, to offer appropriate explanations and to answer any questions. The individual emotional support and encouragement given to the patient and his family was planned to support the care implemented by the staff nurses.

At the end of a specified time period from admission, the patient was interviewed again and the final State-Trait Anxiety Inventory administered by the investigator. The sleep, medication records and daily diary were terminated. (The patient was given the option to continue his diary if he so wished, after the results were compiled). The nurse, caring for the patient, was asked to again assess the patient's anxiety level on a Likert scale.

In most cases the termination of data collection coincided with discharge. Thus discharge planning became part of the instructional program and psychological support given to the patient during the study.
Development of Remaining Chapters

This study is reported in five chapters. The first chapter introduces the problem of anxiety due to the effects of treatment stress in burn patients. It addresses the purpose and the significance of the study, the assumptions, the limitations and overview of methodology.

Chapter two presents a review of the literature. It discusses the research studies that have been conducted to further knowledge of the psychological implications of burn care, the relationship of pain to anxiety and the phenomena of anxiety. Implications for audio-visual aids to assist in patient teaching on burn units, the therapeutic nurse-patient relationship and the effect of anxiety on sleep patterns are briefly discussed.

Chapter three describes the methodology of the study. Sample selection, delineation of variables, the research plan, data collecting instruments and method of data analysis are presented.

Analysis and interpretation of the data and findings are discussed in chapter four.

The final chapter includes a summary, plus recommendations and implications for further study.
Chapter 2

REVIEW OF LITERATURE

Selected literature was reviewed to support the development of the study. Plastic surgeons and nurses were interviewed in Toronto, Ontario in 1975 in order to identify some priority problems in burn units. The investigator's working experiences in burn units in Toronto and Vancouver have further substantiated the problem of increase state anxiety due to the stress of treatments in many burn patients. Numerous comments by patients have reinforced the potential significance of the study of this problem.

The review of the literature supported the need for this study. It will discuss, firstly, the psychological implications of burn care; secondly, the relationship of pain to anxiety; thirdly, the concept of anxiety; fourthly, the implications of audio-visual aids to assist patient teaching and fifthly, the therapeutic nurse-patient relationship. Finally, the effects of anxiety on sleep patterns will be presented.

Considerable attention has been focused on the basic nursing care and surgical techniques necessary for the treatment of thermal injuries. Little research attention has been given to the emotional problems of burn patients.\(^{14}\)

The numerous studies concerning the care of the severely burned patient have emphasized the problems related to in-hospital care, such as resuscitation, debridement, topical antimicrobial therapy and skin

grafting. While the immediate psychological aspects of a very severe burn injury have been recorded during hospitalization, the long term outcome of these patients' physical and social adjustments has not been well documented. Because of the current lack of information in this area, the burn patient is subjected to the stress of uncertainty during his early management which commonly affects his physical and psychological recovery. The problem is of particular importance in view of the ever increasing number of treatment modalities as well as the improving survival statistics as a result of more sophisticated burn care.  

The investigator found few nursing studies discussing the psychological reactions of less severely burned patients to their care. Recent studies have tended to focus on epidemiology and on methods of treatment management.  

There has been research conducted by nurses studying pain control on burn units. From these studies, Fagerhaugh reported that stress and anxiety levels increased pain and often the mode of pain expression stemmed largely from anxiety. She concluded in her study that if patients were informed about what to expect during various phases of burn care, their perception of pain would be reduced.


Davidson described some of the emotional reactions of patients during the acute phase following the burn accident and indicated some implications for nursing care. She reported that patients, who were allowed to ventilate intense anger and frustration to the research team, benefited from this form of release.

**Psychological Implications of Burn Care**

The cited literature validates the problem of anxiety on burn units in studies conducted by physicians and nurses.

Interest in the psychological reaction of burn victims was aroused by the Cocoanut Grove Nightclub fire in Boston in 1942. Cobb and Lindemann observed serious emotional problems in its victims which Adler found to persist in a follow-up study 11 months later.

Cobb and Lindemann studied 17 victims of the nightclub disaster at the Massachusetts General Hospital in order to learn how to recognize those patients who are liable to emotional disorders and to prevent such disorders as possible. Each patient received a neurologic and psychiatric exam on the eighth day after their admission to hospital. Fourteen of these patients presented in-hospital neuropsychiatric problems. The authors described various reactions such as "outbursts of aggression, periods of apathy and fluctuation in mood." Other patients exhibited an intense fear of being left alone as well as fear of impending disaster.

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19 Stanley Cobb and Erich Lindemann; "Neuropsychiatric Observation in Management of the Cocoanut Grove Burns at the Massachusetts General Hospital," *Annals of Surgery* 117 (June 1943), pp.814-824.
Cobb suggested that during the convalescent phase, the patient should be provided with counselling in his transitory problems and his efforts to adjust to his situation.

Adler made psychiatric observations on 46 patients admitted to Boston City Hospital after the nightclub fire. These patients were followed up eleven months later. No essential differences of emotional reactions or psychiatric end results between male and female patients were noted. Observations, therefore, apply to both sexes. Of these 46 patients, 20 did not manifest psychiatric complications at any time afterward. Twenty-six patients presented symptoms of general nervousness and anxiety neurosis lasting three months. After nine months, 32 did not show any aberration from pretraumatic personality whereas 13 still suffered general nervousness and anxiety neurosis. Of the 20 patients who did not develop psychiatric complications, 15 had lost consciousness. Twelve of these 15 had prolonged unconsciousness beyond one hour. In the 26 patients with psychiatric complications, 13 had lost consciousness below one hour. This suggests that unconsciousness, and in particular prolonged unconsciousness, was an essential factor in preventing the development of further psychiatric difficulties.

These studies, conducted by Cobb, Lindemann and Adler built the foundation for further research in the area of emotional reactions of burned patients. These broad descriptions of psychiatric complications during the in-hospital period and post-discharge period led other investigators to focus more clearly on the acute phase of burn care.

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In 1953, Hamburg\textsuperscript{21} described and classified the types of emotional problems occurring during hospitalization after making a detailed study of the adjustment reactions of severely burned adults. Over a 1 year period, 12 patients (10 males and 2 females) were studied intensively at the Burn Centre in Brooke Army Hospital. Hamburg's extensive research into the adaptive problems of these patients revealed that many emotional difficulties were encountered in relation to their treatments. These difficulties adversely affected the patient's cooperation and course of illness. Hamburg\textsuperscript{22} also reported that, after the immediate problem of the question of survival, the patient wondered how long his hospitalization would be. This concern persisted 6 to 8 weeks while sources of stress accumulated. Hamburg listed these stressors as: inadequate communication between the patient and physician regarding the injury, absence of family and friends, threat to the capacity to be loved by others and dependence on others.

Hamburg\textsuperscript{23} also stated that each patient seemed to develop an early realization that there were other people undergoing the same experience and there were others who had been similarly injured and had recovered. When this realization was combined with impressive visual evidence of another patient's extensive recovery, the effect was often profound. Several patients later stated that the most encouraging single experience was contact with another patient who had suffered equally


\textsuperscript{22}Ibid., p.3.

\textsuperscript{23}Ibid., p.11.
severe burns as manifested by photographs or by descriptions and had recovered satisfactorily.

Hamburg's emphasis, in his study, was in the emotional problems of the severely burned patient in the acute phase. Many authors seem to prefer this time period. It is interesting to note that Hamburg alluded to the fact that emotional difficulties are encountered due to the effects of treatments and may affect the course of recovery. No other authors discuss the effects of treatment stress on the burned patient though they seem to be aware that it does exist.

Another interesting point that Hamburg reports, is that patients were encouraged remarkably when visual evidence of recovery was displayed through photographs. Brantl\(^{24}\) confirms this by stating that photographs of other burn patients, showing the improvement made in time, will often help allay apprehension. The use of audio-visual aids to assist in patient teaching will be discussed later in this chapter.

A study conducted by Andreasen and Noyes\(^{25}\) examines emotional reactions of adult burn victims in light of current treatment methods. The report is based on observations made on all adult patients admitted to the University of Iowa's Burn Unit over a nine month period. All patients and their relatives were interviewed intensively soon after admission. Thereafter they were visited on daily rounds throughout their hospital course by a team consisting of 2 psychiatrists, a

\(^{24}\)Virginia Brantl, "The Care of Patients with Burns," Nursing Outlook 6 (July 1958), p.385

psychiatric nurse and a psychiatric social worker. A variety of management problems created by emotional complications were noted and appropriate methods of handling them were recommended. Reactions such as anxiety, depression, regression, emotional lability, nightmares and fear of deformity were noted in nearly all patients during their hospital course. Andreasen and Noyes concluded that if the medical staff had some insight into the nature and causes of these reactions, emotional problems could probably be handled without psychiatric consultation. The authors also stated that the patient needed to air his concerns in a confidential one to one relationship and that the patient should be warned well in advance of surgical procedures and be given a broad perspective of his treatment program.

It is this investigator's intent to provide the patient with the opportunity to air his concerns as well as give him a better idea of his treatment program by means of an audio-visual aid and explanation. Relative to Andreasen's comment, "if the medical staff had some insight into the nature of reactions to burn trauma, emotional problems could probably be handled without psychiatric consultation," it is this investigator's belief that probably the less severely burned patient in the post acute phase needs an opportunity to ventilate his frustrations and emotions. It seems that the less severely burned patient does not need a psychiatric consultation but rather an adequate support system.

During the course of a year, Davidson studied the emotional reactions of 33 severely burned patients during the acute phase at the

University of Iowa Hospital Burn Unit. She found that these patients seemed to experience traumatic neurosis, sleeplessness, decreased ability to focus attention, periods of disorientation, regression and increased complaints of pain accompanied with anxiety. It was evident that, if the patient's means of coping with his acute phase of illness resulted in an extreme depletion of physical and emotional energy, then the convalescent phase also became a struggle for survival with the burn patient having many specific needs requiring unique nursing care.²⁷

A study by Schlichtmann²⁸ presented at the American Nurses Association Clinical Session in New York in 1968 predated Davidson's findings. Schlichtmann analyzed 4 severely burned patients' verbal statements in order to identify the adaptive mechanisms they used and to categorize these mechanisms as emergency or recovery mechanisms. From tape recorded nondirective interviews during the early and late periods of hospitalization, Schlichtmann suggested that methods of treatment used may have presented environmental clues to the patient that influenced his adaptive mechanism. The principle findings concur with the conclusions found in the literature regarding adaptation to stress and the psychological impact brought on by burn injuries. The four patients in Schlichtmann's study reacted to stress first by minimizing the impact of the situation, second, by employing such emergency mechanisms as denial, delusion and illusion. As they became

²⁷Davidson, "Nursing Management of Emotional Reactions of Severely Burned Patients During the Acute Phase," p.375.

aware of reality, emergency mechanisms were replaced by mechanisms that facilitated recovery.

Andreasen's Davidson's, and Schlichtmann's studies, as just cited, investigated the emotional reaction of severely burned patients in the immediate acute phase. In all studies, extensive interviews were conducted with the patient to evaluate his psychological status pre-injury and post-injury. Since it is impossible to "predict" a burn injury, it is impossible to completely assess the patient's pre-injury personality or his experience and methods of coping with stressful situations. Moreover, in reviewing the literature, there seemed to be no studies of the emotional reactions of less severely burned patients even in the post-acute phase of recovery. Therefore, conclusions drawn from the above studies should not be generalized to all burn patients or to the burn population in this study.

It was also noted, in reviewing these studies, that little mention was given to the effects of treatments on these patients. It is this investigator's belief that treatment stress is a precursor of emotional reactions exhibited by burn victims.

Authors' conclusions from various psychological studies conducted on burn units do seem to emphasize one important intervention in burn care - namely, information giving and the provision of emotional support as being paramount throughout the course of burn care.

One of the objectives of burn care is the preservation of the emotional equilibrium of the patient. Jacoby\textsuperscript{29} stated that during the

\textsuperscript{29}Florence Jacoby, Nursing Care of the Patient With Burns (St. Louis: C.V. Mosby Co., 1972), p.60.
hospitalization period prior to the closure of the burn wound by primary healing or by the use of skin grafts, the true personality of the patient does not manifest itself. The patient may become very depressed. Painful treatments, fear of disfigurement, worry about financial needs and guilt are a few of the factors producing stress. Supportive help is needed and should be started at the time of admission. The patient must be guided to focus away from constant comtemplation of self. He needs a great deal of verbal reassurance, explanation and moral support.

Jackson\textsuperscript{30} reported that answering questions is important in turning a patient who is immobile with fear into someone who will co-operate with treatments. Rehabilitation must begin on admission. Relieving the patient's fears of the unknown and unanswered questions are of great importance.

Noyes and Andreasen\textsuperscript{31} furthered this conclusion from their observation of 11 severely burned adults in the Burn Unit of the University of Iowa Hospital. They observed that patients who knew what to expect and when to expect it in their treatment program seemed greatly relieved by this knowledge. Their existence took on a greater certainty and their sense of mastery was increased when they felt that they were participating in their treatments by making observations and sharing decisions. The morale of these patients was maintained by the realization that, as lonely as their suffering seemed, they were not alone but one of a company of persons, some of whom were more seriously ill. These same authors concluded

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that "patients benefit from education regarding what they are experiencing both physically and psychologically."\(^{32}\)

Based on the findings of their follow-up study of the physical and psychological disabilities of former burn patients, Chang and Herzog\(^{33}\) concluded that emotional support in some form should be given on a regular basis during hospitalization.

Most investigators suggest that the behavioural response to the burn wound is influenced more by psychosocial implications of the injury than by physiological changes.\(^ {34}\) Such implications go beyond the question of survival and the distress of physical pain. The patient queries the effect of his injury on his family, his job, his future and body appearance.

The emotional response to the trauma in the severely burned adult in the acute phase has been well described. Authors have repeatedly stressed the heightened anxiety associated with fear of the unknown. A few have suggested specific interventions to be considered in an attempt to lessen anxiety as well as provide emotional support. Little attention, however, has been focused on the emotional reactions of the less severely burned patient during the lengthy hospitalization of the post acute recovery phase.


\(^{33}\)Frederic Chang and Briant Herzog, "Burn Morbidity: A Follow-up Study of Physical and Psychological Disability," p.37.

Pain and Its Relationship to Anxiety

Consideration must be given to the role of pain as an anxiety-producing stressor. Pain is the crux of the burn experience. Authors have described the pain experience in relation to anxiety in both the burn patient and the surgical patient.

Individual pain thresholds vary considerably as does extent and depth of burn. No broad truisms are applicable to the nature or severity of pain that the average patient experiences after a burn. The pain threshold and the capacity to tolerate pain appears to decrease over the course of hospitalization. Pain is increased by anxiety. Anxious expectation of pain is the salient factor in causing its progressive increase. 35

Fagerhaugh 36 studied pain expression and control on a burn unit in a San Francisco hospital. Characteristics of burn pain were categorized as intensity and long duration, depending on the extent and location of the burn, anxiety level and pain tolerance. Peaks of intense pain occurred during tubbing, debridement, dressing changes and physiotherapy. When skin grafts were taken, donor site pain was severe but general pain was noticeably reduced. Stress and anxiety levels increased pain and often the mode of pain expression stemmed largely from anxiety. This author concluded in her study that, if patients were informed about what to expect during phases of burn care, their perception of pain would be reduced. 37

36 Shizuko Fagerhaugh, "Pain Expression and Control on a Burn Unit," p.646.
37 Ibid., p.650.
Even the expression of pain can be a stressor in itself. Nurses have had experiences with both stoic and highly expressive patients. Janis states that a person's social background presumably influences the way in which a painful experience is perceived and assimilated, that is, whether he will freely express his emotional agitation or try to keep it hidden from others.

In their study, Hamburg and Artz found that physical pain is considerably less severe than is generally supposed; on the other hand, emotionally induced pain and anxiety are a much more serious problem than is generally recognized. Patients frequently do not distinguish between physical pain and emotional tension. They report all discomfort, regardless of origin, as pain. It is of great importance to realize that the patient needs not only relief of pain but relief of fear as well.

Bruegel found that perceptions of pain vary greatly from person to person. Anxiety, enhanced by pain, is considered a significant factor in virtually all discussions of the pain experience.

Hill and Kornetsky concluded from their studies that under conditions which promote anxiety or fear of pain, subjects appear to overestimate the intensities of painful stimuli. This effect may derive

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from the tendency of anxiety to narrow the focus of attention, thereby
reducing the effect of distracting stimuli and thus making the noxious
sensation highly salient.

Moss and Meyer\textsuperscript{42} conducted a study which dealt with the capability
of nurses in providing care which is effective in reducing or relieving
a patient's pain without the use of pain relieving drugs. The study was
based on the contention that, if a patient's perception of painful
stimuli can be modified, his response to the stimuli can also be modified.
Thus, nursing care prescribed pertains to actions taken in modifying a
patient's perception of pain stimuli. Pain relief seems to relate to
the interaction or exchange of responses between a nurse and a patient.
The authors concluded that a person's attitude appears to be
strengthened when measures are taken to reduce or relieve the feeling of
pain. If responses which cope directly with the stimuli rather than
with the signs of pain can be provoked from the patient and reinforced,
then the tendency to perceive such stimuli as pain-related may be altered.
If one can alter the attitude of the person toward the stimuli and his
ability to cope with the stimuli, one can also vary the perception of the
stimuli and the experience of pain. Fagerhaugh\textsuperscript{43} substantiates this by
the comment that "although anxiety increased pain perception, it can
be controlled by a positive attitude."

McCaffery and Moss\textsuperscript{44} emphasize the importance of discussing pain
with the patient in order to obtain his trust, to mobilize his adaptive

\textsuperscript{42}Fay T. Moss and Burton Meyer, "The Effects of Nursing Interaction

\textsuperscript{43}Fagerhaugh,"Pain Expression and Control on a Burn Unit," p.648.

\textsuperscript{44}Margo McCaffery and Fay Moss, "Nursing Intervention for Bodily Pain,
\textit{American Journal of Nursing} 67 (June 1967), p.1225.
mechanisms and to change his attitude toward pain related stimuli. Informing the patient of what will occur before a painful treatment is initiated mobilizes his adaptive mechanisms. McCaffery and Moss emphasize the importance of remaining with the patient. As anxiety increases, so does the desire to be with another person. Therefore, the presence of the nurse is important during latter stages of pain anticipation since anxiety seems to increase as the time approaches to engage in a stressful activity.

When pain signals to a man that his life is hanging in the balance, he will experience and communicate his anxiety in terms of pain. A great deal of pain is relieved by honest reassurance regarding its meaning and the body's integrity. The listener must be prepared for the expression of strong emotions. Patients benefit from ventilation of such emotions and subsequent explanation regarding what they are experiencing physically and psychologically.

The Concept of Anxiety

The subject of anxiety has been considered in the literature from many viewpoints. Those who have written about the measurement of anxiety have been preoccupied with a static evaluation of a fixed moment of anxiety.

45 McCaffery and Moss, "Nursing Intervention for Bodily Pain," p.1227.


They have failed to consider anxiety over time, changing in varying degrees and assuming various directions. Other psychologic phenomena must be considered in relationship to anxiety. Though various tests can record static relationships between two or more factors at a given instance with great accuracy, these data may not be valid at the very next moment. Anxiety changes in intensity from moment to moment. Anxiety is fluid to time, quantity, quality, rate and direction of change.48

The research trends are reflected in the availability of increasing numbers of instruments and techniques for measuring anxiety. In reviewing anxiety literature, Cattell and Schier report that they counted more than 120 personality-type tests which have been claimed to measure anxiety.49 The sheer volume of empirical research on anxiety precludes any attempt to summarize it. Critical reviews of research on psychological stress contain much that is relevant to the investigation of anxiety since anxiety is generally regarded as a product of stress and a mediator of its influence on behaviour.50

Highly individual factors determine whether a particular situation constitutes a psychological stress for a particular individual. The judgement as to whether or not it constitutes a stress for an individual cannot be made from the nature of the external event alone.51

50 Ibid., p.8.
It requires knowledge of the response as well as knowledge of that person's personality makeup, regarding the way they react to a situation such as burn treatment.

Levi has done classic studies on stress. Levi\(^{52}\) stated that "every psychosocial or physical environmental change can be stressful and evoke anxiety. The highest stress levels are usually found at the extremes of the stimulus continuum, that is, during exposure to over- or under-stimulation." Levi concedes that there are difficulties implied in all attempts to partial out the primary effects of such purely physical stimuli, as trauma, from the secondary effects elicited by psychosocial reactions to them. It is well established that the sympathoadreno-medullary system is influenced by a great variety of psychosocial stimuli in man. If the stimulus lasts too long or is repeated too often, the result will be functional disturbances in various organs and organ systems. Such a dysfunction, if long-standing or intense, may result in permanent structural changes of pathogenic significance, at least to predisposed individuals. To illustrate the application of this theory, the majority of patients on a burn unit in a particular Vancouver Hospital are given milk and Maalox\(^{\text{R}}\) every hour in order to prevent gastric stress ulcers from developing.

Ambiguity in the conceptual status of anxiety arises from the more or less indiscriminate use of the term to refer to two very different types of concepts. Anxiety is most commonly used in an empirical sense to denote a complex reaction or response -- a transitory state or condition of the organism that varies in intensity and fluctuates over time.

The term anxiety, however, is also used to refer to a personality trait, that is, to individual differences in the extent to which different people are characterized by anxiety states and by prominent defenses against such states. 53

Empirical evidence of different types of anxiety concepts have emerged from the factor analytic studies of Cattell and Schier. 54 These investigators identified two distinct anxiety factors which they labeled trait anxiety and state anxiety. The trait anxiety factor was interpreted as measuring stable individual differences in a unitary, relatively permanent personality characteristic. The state anxiety factor was based on a pattern of variables that covaried over occasions of measurement, defining a transitory state or condition of the organism which fluctuated over time.

Research on the concept of anxiety would seem to require that anxiety reactions or states be operationally and conceptually distinguished from the stimulus conditions that arouse them and the cognitive and behavioral manoeuvres that are learned because they lead to anxiety reduction. It would appear that research on anxiety also requires that a distinction be made between anxiety as a transitory state that fluctuates over time and as a personality trait that remains relatively stable over time. 55

Downs and Newman 56 believe that studies are needed to compare the

53 Charles D. Spielberger, Anxiety and Behavior, p. 12.
54 Ibid., p.13.
55 Ibid., p.15.
effects of an individualized approach for patients who appear to be
affected by high levels of stress with an informative approach for those
who indicate the effects of initial low or moderate levels of stress.

Every individual reacts differently to the stressors in a burn unit
as indicated anecdotally in the burn bath incident in Chapter I. Devising
ways to reduce state anxiety is a need recognized by those caring for
burn patients.

The Implications for an Audio-Visual Teaching Tool to
Supplement Patient Teaching on a Burn Unit

It has long been recognized by various authors that explanation of
a procedure is likely to decrease anxiety in the pre-surgical patient.
According to Saylor,\textsuperscript{57} pre-surgical anxiety is rooted in fear of the
unknown. Therefore, the alleviation of anxiety will be seen in
proportion to the information and support given to the patient.

It has been assumed that visual evidence of the procedure accompanying
the teaching will enhance the explanation of the treatment or procedure.
In reference to the burn patient, Andreasen\textsuperscript{58} stated that patients should
be warned well in advance of any procedure and given a broad perspective
of their treatment program. Williams\textsuperscript{59} supported this statement by her
belief that a burn patient has a need to know what to expect of his
healing burn wound, why positioning and activity are necessary in protecting
graft sites and that preventing contractures is important.

\textsuperscript{57}Dennis Saylor, "Understanding Pre-Surgical Anxiety," \textit{Journal of the
American Operating Room Nurses} 22 (October, 1975), p.626.

\textsuperscript{58}Andreasen and Noyes, "Management of Emotional Reactions in Severely
Burned Adults," p.69.

\textsuperscript{59}Barbara Williams, "The Burned Patient's Need for Teaching," \textit{Nursing Clinics
A patient in Williams' study requested the authors to help him visualize what he would have to do and what would happen to him. By explaining the procedure beforehand, the patient could prepare himself mentally for what was about to occur. Therefore, fear of the unknown was diminished.\textsuperscript{60} This is also one of the major objectives of this investigator's present study.

Any new event which impinges on an individual arouses tension and the person subjected to the stress employs various devices to assist him in the reduction of tension. Basic to the need to attach some meaning to the event is the need to give it some cognitive structure. Reduction of excitement is essential so that the work of worrying can be done effectively. When the individual is misinformed, corrective communication, realistic in nature, can lessen fear.\textsuperscript{61}

Nurses' attempts to give the patient tools for structuring stressful situations are necessary in helping the patient face this situation. Meyers\textsuperscript{62} states that less tension is created when the patient is given specific information upon which he can structure the impending event causing him to experience stress. To tell the patient exactly what is going to happen to him may be helpful to him. It is related to the fact that the patient is no longer a depersonalized patient being treated in a routine way. Rather, he is being treated as a person of intelligence whose cooperation is being sought by his nurse.

\textsuperscript{60}Williams, "The Burned Patient's Need for Teaching," p.638.

\textsuperscript{61}M.E. Meyers, "The Effects of Types of Communication on Patients' Reactions to Stress," \textit{Nursing Research} 13 (Spring 1964), p.126.

\textsuperscript{62}Ibid., p.129.
Weisz commented that patients, engaged in an information gathering activity, gain a better understanding of the goals of treatment and are more highly motivated to achieve these goals.

Hamburg and Artz specifically endorsed the utilization of photographs in providing emotional support and explanation to burn patients as related earlier in this chapter. Hamburg and Artz stated that visual evidence of the likelihood of uneventful recovery is particularly encouraging in the early phase of hospitalization. Seeing others who have also been badly burned tends to make the patient realize there are others who have gone through the same kind of experience and that his injuries can be successfully treated. Many patients are reassured by seeing photographs that show other burned patients at the time of injury and after recovery. This impressive visual evidence of the probability of ultimate recovery is often more effective than verbal reassurance but cannot take its place.

This investigator's clinical experience supports the assumption that it is possible to reduce anxiety due to the effects of treatment stress through the use of an audio-visual program that provides information about the treatment of burns. Other authors were in accord with this belief. It is imperative that verbal explanation and reassurance accompany any audio-visual tool used to assist in patient teaching.

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The Therapeutic Nurse-Patient Relationship

In this study, the investigator established her role to the patient as a nurse specialist studying burn care, not involved in day to day care, but gathering information on the reactions of burn patients to their treatments. Her purpose was to visit the patient during his hospitalization, answer any questions, provide emotional support as needed and prepare him for new phases of his treatment. The patient would be able to ventilate his frustrations, fears and anxieties to a person responsive to his emotional needs.

The literature supports the establishment of therapeutic nurse-patient relationships. Travelbee developed a theme of nursing as a profession involved in caring. She feels that all nurses can learn to establish and maintain helping relationships with others. Travelbee defined nursing as an interpersonal process whereby the professional nurse practitioner assists an individual, family or community to prevent or cope with the experience of illness and suffering, and if necessary, to find meaning in these experiences.

In assisting the individual to cope with the experience of illness, a helping relationship is built between the nurse and patient. This relationship provides a foundation upon which meaningful dialogue on significant personal matters can occur.

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Each normally functioning human being has a potential for achievement and for solving his own problems. Helping is frequently more a matter of providing emotional support and encouragement as well as providing an environment in which the patient can think through and make decisions on his own. Nurses can assist the patient in this process by making it easier for the patient to discuss problems and encouraging him to explore his feelings about it.  

Lindemann and Caplan have observed that the individual is usually in a state of homeostasis. His equilibrium is maintained by complicated interchanges between the individual and his environment and is particularly dependent upon the interpersonal transactions through which he gratifies his emotional needs. When the individual is incapable of solving problems that have been brought about by his life situation and the homeostatic mechanisms are unsuccessful in restoring his previous equilibrium, a more or less protracted period of emotional upset ensues. This crisis is characterized by an increase in inner tension, unpleasant affect and disorganization of behavior. Nurses, therefore, can strive to assist the person in restoring homeostasis or to assist the patient in reaching the highest level of functioning he is capable of at this time.

The purpose of the planned interventions in this study is to assist the patient in maintaining a level of emotional equilibrium over the


69 Ibid., p.71.
period of hospitalization for burn care. By sharing the concerns of the patient, by providing emotional support as well as information about the phases of his burn treatment, the nurse specialist strives to establish a therapeutic relationship with the patient. Gazda et al.\textsuperscript{70} stated that it is essential to keep the patient well informed of his schedule in moving through phases of treatment; if not, everything that happens (or does not happen as he thinks it should) will add to his discomfort and increase his anxiety.

The nurse-patient relationship, therefore, is an essential component of this study. Basic to this relationship is the communication of the belief in the potential of the patient as an individual capable of understanding and assisting in his own care. This shared understanding facilitates the establishment of a therapeutic rapport between patient and nurse.

\textbf{The Effect of Anxiety on Sleep Patterns}

In recent years, there has been a great increase in sleep research. Although the exploration of sleep is very new in its current dimensions, the implications of sleep research for general medicine are enormous.\textsuperscript{71}

It has been postulated that poor sleep patterns are sensitive indicators of increased anxiety. Sleep disorders accompany physical and mental disease.

\textsuperscript{70}Gazda et al., Human Relations Development, p.174


\textsuperscript{72}Ibid., p.28.
Snyder and Scott\textsuperscript{73} noted that the effects of abiding levels of stress and anxiety on sleep profiles have been particularly interesting to psychophysiologists. However, these authors did not support this theory with facts.

The literature related to sleep and anxiety tends to discuss the effect of neurotic depressive states on sleep patterns rather than "normal" anxiety due to situational stress. Most of the research studies conducted in intensive care units focused on the effects of sleep deprivation in relation to critically ill patients.

Luce and Segal\textsuperscript{74} reported that the effect of stress was evident during sleep. In experimental stress situations, subjects had less delta sleep and more galvanic skin activity (conductivity of the skin). The intensity of stress was visible in sleep. Electroencephalograms of the sleep patterns of Luce's subjects demonstrated tracings depicting the tensions and stresses which occurred during disturbed sleep.

Clift\textsuperscript{75} concluded that, in general, women scored somewhat higher on tests of anxiety than men of the same age. The women reported poorer sleep. Also, sex differences in reported quality of sleep became greater with age.

Johns\textsuperscript{76} discussed various methods for assessing sleep. Although

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daily sleep charts have the advantage over questionnaires of giving
information about daily variations of sleep over prolonged periods, no
single method of sleep assessment, whether subjective or objective, can
give enough information to permit neglect of other methods. Johns noted that when depressed patients rated their quality of sleep on a
questionnaire, they tended to overestimate their degree of sleep
disturbance. It was difficult for these patients to distinguish
subjectively between brief periods of light sleep and wakefulness.

The nurse must assess carefully whether or not the patient is
sleeping or has slept. The objective report of the nurse that the
patient slept well is often not substantiated by the subjective report
of the patient that he did not sleep well. The nurse should ask the
patient to evaluate the type of sleep he is experiencing. Often, under
conditions of discomfort, the person who says he slept poorly actually
takes longer to fall asleep, is more restless and dreams less.
Dreaming is considered necessary for the release of suppressed
intrapsychic tension. Dreaming has been substantiated by research as
occurring during periods of Rapid Eye Movement (R.E.M.). A certain
amount of Rapid Eye Movement is an important aspect of good sleep.

In this investigator's study, a record was kept by the staff nurses
of the hours of sleep and wakefulness over the 12 hour time period. The
patient was asked to subjectively evaluate his quality of sleep on a
daily basis. As the literature has indicated, the sleep pattern of the
patient should reflect the level of state anxiety he is experiencing.


Summary

The review of literature encompasses many areas of concern in burn care and burn research. It is important to know how the stress of a new situation can be reduced and what factors need to be considered to divert patients' energies most effectively.\(^{79}\)

It is imperative that the health team be aware of the emotional problems of burned patients. There is a need for all staff to understand these patients' basic emotional processes so that they can responsively apply their knowledge. All the empathetic thinking that can be mustered is vital to the treatment of burns and clearly applicable in the provision of humanistic care.\(^{80}\)

Anxiety arising from response to perception of painful stimuli vary from person to person. Pain and anxiety are interrelated. Pain, as a stressor, increases anxiety. Most people respond to stressful situations with a rise in their anxiety level.

Anxiety as a process needs to be understood. Beyond this must be added the distinction between anxiety as a transitory state versus anxiety as a relatively stable personality trait. Anxiety is also related to disturbance in sleep patterns.

As a means of decreasing situational anxiety, many authors agree that the patient needs an opportunity to ventilate his pent-up emotions and frustrations. Explanation, emotional support and visual evidence of

\(^{79}\)Meyers, "The Effects of Types of Communication in Patients' Reactions to Stress," p.12.

recovery by means of an audio-visual teaching tool, may help alleviate anxiety.

The review of the literature clearly substantiates and validates the problem of increased anxiety due to the effects of treatment stress in burn patients.
Chapter 3

THE STUDY

A descriptive approach using participant observation, interviews and specific data collecting instruments was used with a one group pre-test, multiple post-test research plan. Several variables within the group were compared from two perspectives. Correlational statistics were applied to indicate the strength of the relationship of the two perspectives to these variables in the reality of the on-going situation of burn care. A case study approach was also used simultaneously.

The Setting

The study took place on the burn unit of a large general teaching hospital in Canada during a four month period. This burn unit was comprised of a 3 bed intensive care unit, 13 single rooms and two open ward areas, each with 8 beds. The burn unit was staffed by three plastic surgeons, "one burn resident" physician, 30 nurses, 2 physiotherapists and one occupational therapist. A psychiatric nurse is often consulted if a patient expresses severe emotional problems in adjusting to the burn trauma.

Burn Treatment:

Usual treatments, as indicated on an individual basis, include saline compresses, daily debridement of eschar and collagen, burn baths in a Hubbard tank, whirlpool arm baths, and application of an antibiotic cream. Splints are made for limb extremities and are worn constantly except for frequent periods of exercise. Skin grafting of third degree burns usually takes place soon after debridement of the burn injury. After skin grafts
have been placed on the wounds, frequent "rolling" with Q-tips is necessary in order to express accumulated fluid exudate from beneath the graft. At times, surgical pinning of a limb is necessary. The pins, attached to traction, are necessary to keep the limb elevated and to protect skin grafts from accidental removal.

The average length of hospitalization is approximately one month for the less severely burned patient.

The Sample

Each patient meeting the "subject criteria," admitted to the burn unit over the data collection period, was approached and an explanation of the study given before being requested to participate in the study. Sample size was dependent upon the number of burn victims admitted to the burn unit of the hospital during the research period. Therefore, the sample of this study was comprised of a total of five subjects.

Subject Criteria -
1. Adult, 16 to 65 years of age.
   It was thought a subject younger than 16 years of age might not fully understand the purpose of the research study or the content of the instructional program. A subject older than 65 years of age might confound the results of the study since there is a greater incidence of problems associated with aging. A disease coexisting with the burn might affect the anxiety experienced by the patient.

2. Extent of surface area burned - less than 30%.
   A burn more extensive than 30% in an adult patient would be considered
critical and life-threatening. The threat to life and the conditions associated with major burns would render the subjects unsuitable for the study. Also, the patient may be too sedated to comprehend the teaching program. The patient should be alert and oriented in order to receive exposure to the program.

3. Depth of burn - second and/or third degree.
Patients with only first degree burns are usually not admitted to hospital.

4. Area of surface burned -- all areas including the head.

The patients were, in no way, made to feel obliged to participate in the study. Written consent was obtained from each patient agreeing to participate. (Appendix A).

An explanation of the purpose of the study was given. The patient was informed that he could withdraw from the study at any time. All information collected was strictly confidential and circulation of the information limited to those involved in the study. A number, not the patient's name, was used to identify data collection forms. All information collected was necessary for the purposes of the study. The results and conclusions were made freely available to the participants upon completion of the study, if requested. Usual, routine treatment did not include the instructional program. No nursing care was omitted.
Method of Data Collection

The patient was approached a few days after admission and an explanation of the study given before being requested to participate in the study. The investigator established her role as a nurse specialist studying burn care, not involved in day to day care, but gathering information on the reactions of burn patients to their treatments. She explained that she would visit the patient not less than eight times during the patient's hospitalization, answer any questions, provide emotional support as needed and prepare him for new phases of his treatment. If the patient agreed to participate in the study, the written consent form was signed by the patient and the investigator.

The data collection period began the next day. The patient was assessed by the investigator. The purpose of this brief interview was to collect information about the patient as well as reactions to care and treatments.

After the assessment interview, the State-Trait Anxiety Inventory was administered by the investigator. Part I of the tape-slide program, "Explaining Your Burn Care" was shown. (In three cases, it was necessary to show subsequent parts of the program at this time since phases in treatment of the burn wound were progressing very rapidly.) After the presentation of the program, the patient was encouraged to ask questions and express his concerns. Explanation and emotional support, based on the patient's voiced concerns, were provided by the investigator at this time. The informational and support components of the instructional program were evaluated by a data collecting instrument designed specifically for this purpose. The patient was asked to enter comments in a daily diary.
around the same time every day.

On this first day of the data collection period, the nurse caring for the patient was asked to assess her patient's level of state and trait anxiety. She rated her subjective opinion of the anxiety level she perceived in her patient on a Likert-type scale.

Sleep and medication records were placed on the front of the patient's chart. The nurses were informed that this particular patient was a "research subject." Not only was the patient's chart clearly labelled, a card of instructions was also placed in the patient's kardex. The purpose of this card was to inform the nurses during "report" at each change of shift that this patient was a subject in a nursing study.

During the data collection period, the patient was visited by the investigator eight times. Appropriate sections of the instructional program were shown to the patient depending on the treatment the patient was to receive at that phase of recovery. The specific section of the tape-slide program and discussion following were evaluated by means of the evaluation tool for the instructional program.

These eight visits were not at random. Two visits took place in the morning, before treatments were initiated. This was considered a high stress period. The State-Trait Anxiety Inventory was administered by the investigator during each visit. The patient was encouraged to ventilate his concerns and fears. Since each patient is an unique individual, anticipatory guidance and emotional support was an individual process dependent on such factors as the patient's background experience, voiced concerns and ability to relate to the reality of the burn treatment situation.
Two visits took place in the afternoon after treatments for that day had finished. This was considered a low stress period. The State-Trait Anxiety Inventory was administered by the investigator during each visit. The patient was encouraged to verbalize his concerns, frustrations and problems. This interaction with the nurse specialist was considered supportive care.

Two visits did take place at random where the State-Trait Anxiety Inventory was not administered. The patient took the lead in discussing whatever was on his mind. A therapeutic rapport was always sought by creating a supportive environment on the part of the nurse specialist.

After each visit, the investigator collected the completed diaries. Nurses' notes were reviewed for descriptions of behavior indicating an increase or decrease of anxiety and need for analgesic, sedative and sleeping medications. Since the visits were not tape recorded, the investigator entered data gained from conversation with the patient in on-going field notes.

On the final day of the data collection period, the sixth State-Trait Anxiety Inventory was administered by the investigator. The patient was asked to evaluate the helpfulness of the opportunity to ventilate his thoughts and anxieties. A review of the contents of the diaries and State-Trait Anxiety Inventories was given. The patient was given the option of continuing his diaries if he so wished.

The nurse caring for the patient that day was asked to again assess the patient's state and trait anxiety on the same Likert-type scale utilized at the time of admission. The sleep and medication records were discontinued.
Delineation of Variables

Dependent Variable: State Anxiety

Anxiety is one of the central concepts in modern psychology. If anxiety is to serve adequately as an experimental variable, it is necessary that satisfactory techniques be available for its identification and measurement. Differentiation between categories of anxiety must be made since both state and trait anxiety are prevalent when a burn patient perceives his care and treatment.

"State" anxiety is conceptualized as a transitory emotional state or condition of the human organism that is characterized by subjective, consciously perceived feelings of tension and apprehension. State anxiety may vary in intensity and fluctuate over time. It is an empirical process or reaction taking place at a particular moment in time and at a given level of intensity.

"Trait" anxiety refers to relatively stable individual differences in anxiety proneness, that is, to differences between people in the tendency to respond to situations perceived as threatening with elevations in "state" intensity. Trait anxiety has the characteristics of acquired behavioral dispositions. In other words, trait anxiety indicates differences in the strength of the latent disposition to manifest a certain type of reaction.

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83 Ibid., p. 2.
In general, it would be expected that those who are high in "trait" will exhibit "state" elevations more frequently than low "trait" individuals because they tend to perceive a wider range of situations as dangerous or threatening. High "trait" persons are also more likely to respond to stressful situations with increased "state" intensity. But whether or not people who differ in "trait" will show corresponding differences in "state" depends upon the extent to which a specific situation is perceived by a particular individual as dangerous or threatening, and this is greatly influenced by an individual's past experience. 84

It is widely accepted that most people respond to stressful situations with increased anxiety and that anxiety reactions are characterized by feelings of apprehension, tension and activation of the autonomic nervous system. When anxiety reactions are induced by stressful stimuli, a particular index by which the strength of these emotional reactions to stress are to be evaluated must be specified. 85

Therefore, anxiety as a process refers to a complex sequence of cognitive, affective and behavioral events that is evoked by some form of stress. Since the concept of anxiety as a process implies a theory of anxiety that includes stress and threat, state and trait anxiety can be considered as fundamental constructs or variables. 86

State anxiety

84 Charles D. Spielberger and Richard L. Gorsuch et al, Manual for the State-Trait Anxiety Inventory. p. 3.


86 Ibid., pp. 137-139.
influenced by the effects of treatment stress is the dependent variable in this study.

**Independent Variable:** An instructional program including informative and supportive components. The informational component of a tape-slide program, "Explaining Your Burn Care," was produced by the investigator (Appendix C).

The program was composed of factual basic information about the phases of burn care. There were six parts describing these phases of treatment.

The content areas of the informational component include:

- **PART I**  Orientation To The Burn Unit
- **PART II**  The Burn Bath
- **PART III**  The Arm Bath
- **PART IV**  Skin Grafting
- **PART V**  Splinting
- **PART VI**  Surgical Pinning

After an explanation of the purpose of the program, all patients were shown Part I by the investigator. Depending on each patient's phase of treatment, subsequent parts were shown separately, before the new treatment was initiated. If the treatment was already in progress, the pertinent part of the program was shown to the patient. After the viewing of each section of the tape-slide program, the patient was encouraged to express his feelings about his treatments and to ask questions about his care.

Since the purpose of the program was to allow the patient to visualize his treatment and the setting in which it would take place, before the
treatment was initiated, it was expected the patient should be able to more readily anticipate the situation in advance. By receiving this information, the patient should be able to construct and rehearse reality before his daily treatments. This approach was based on the premise that accurate expectations and information about treatments has to be "fit" by the patients into their own framework of understanding and comprehension to prepare for the experience.\textsuperscript{87} The supportive component consisted of anticipatory guidance about the patient's expectation of treatments as provided by the investigator, plus the answering of his questions. It was hoped that this psychological support and factual explanation facilitated by the audio-visual teaching tool would reduce the effects of treatment stress as indicated by various measures.

In summary, the independent variable was an instructional program comprised of informational and supportive components.

\textbf{Data Gathering Instruments}

Levels of anxiety were monitored by various types of data collecting instruments. As mentioned earlier, each subject was tested with the State-Trait Anxiety Inventory six times by the investigator. Each subject kept a daily diary over the length of the data collection period. The nurses were asked to enter symbols, according to the keys, on the sleep and medication records placed on the front of each patient's chart. The nurse caring for a patient was also asked to assess the patient's level of state

\textsuperscript{87}Jean E. Johnson, "The Influence of Purposeful Nurse-Patient Interaction on the Patient's Post-Operative Course" (unpublished report Yale University School of Nursing, 1965).
and trait anxiety on a Likert-type scale at the beginning and at the end of the data collection period. Evaluation of the informational and support components of the tape-slide program and the discussion following were carried out by means of a tool developed for that purpose. The investigator also made field notes following every visit with each patient. The nurses' notes for each patient were reviewed for descriptions of behavior indicating an increase or decrease of state anxiety as well as need for analgesic, sedative and sleeping medication. These data gathering instruments were in effect over an average of 25 days for all subjects.

Justification for the above data gathering instruments follow.

1. The State-Trait Anxiety Inventory (STAI) was developed by Spielberger, 1968. Test construction procedures for the STAI were begun in 1964 with the goal of developing a single scale that would provide objective self-report measures of both state and trait anxiety. It was assumed that items with a demonstrated relationship to other measures of anxiety would be most useful in an inventory designed to measure both state and trait anxiety. The STAI is comprised of separate self-report scales for measuring the two distinct anxiety concepts. The STAI trait scale consists of 20 statements that ask people to describe how they generally feel. The state scale also consists of 20 statements, but the instructions require subjects to indicate how they feel at a particular moment in time. These scales are printed on opposite sides of a single test form.

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88Spielberger, Manual for the State-Trait Anxiety Inventory, p.9.
The trait scale may be used as a research tool for selecting subjects who vary in their disposition to respond to psychological stress with different levels of "state" intensity. It has been demonstrated that scores on the state scale increase in response to various kinds of stress and decrease as a result of relaxation training.\(^99\)

Regarding the reliability and validity of the STAI, the test-retest reliability (stability) of the trait scale is relatively high but stability coefficients for the state scale tend to be low. This would be expected for a measure influenced by situational factors. Both trait and state scales have a high degree of internal consistency. Evidence of the concurrent validity of the STAI trait scale show that correlations between the STAI, IPAT and Taylor Manifest Anxiety Scale are moderately high. The three scales may be considered as alternate measures of trait anxiety since the intercorrelations among these scales approach the reliabilities of the individual scales.\(^100\) Evidence bearing on the construct validity of the state scale is impressive. The STAI state scale was developed to include items at various levels of item-intensity specificity (that is, differences in the ability of the individual state items to discriminate between conditions characterized by different degrees and kinds of stress and psychological state which vary in intensity).\(^101\) The scale may be used over a wide range of "state" intensities.

\(^99\) Spielberger, Manual for the State-Trait Anxiety Inventory.

\(^100\) Ibid., p. 10.

\(^101\) Ibid., p. 11.
Levitt endorses the State-Trait Anxiety Inventory as the most carefully developed instrument from both the theoretical and methodological standpoints. The test construction procedures were highly sophisticated.

The validating data on the State-Trait Anxiety Inventory are clearly in accord with the theoretical concept of anxiety. Levitt suggested that the measure of trait anxiety should be stable and consistent and a measure of state anxiety should be sensitive to stress situations. Trait scores ought to be correlated with an increase in state scores under stress for a given group of respondents.

Although the State-Trait Anxiety Inventory was originally constructed as a research instrument for investigating the anxiety phenomena in normal adults, it has also proved useful in the measurement of state and trait anxiety in surgical patients.

The 40 item State-Trait Anxiety Inventory is brief and easy to administer to patients, whose attention span, due to the trauma of burns, is short (see Appendix B).

2. The Medication Record

As discussed in Chapter 2, there is a relationship between pain and anxiety. Pain is worsened by anxiety and anxious expectation of pain is the salient factor in causing its progressive increase.

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103 Ibid., p. 72.

104 Spielberger and Sarason, Stress and Anxiety, p. 139.

Perceptions of pain vary greatly from person to person. Anxiety is considered a significant factor in virtually all discussions of the pain experience.  

It is, therefore, logical to assume that a patient's requests for analgesic medication reflect not only his level of pain experience but also his level of state anxiety. It follows that his requests for sedative and sleeping medication also reflect his level of anxiety.

As a method of data collection, a record of the frequency and time analgesic, sedative and sleeping medications were requested by, or routinely given to, each patient was kept by the staff nurses over the data collection period. The type and strength of medication was noted from the nurses' notes. (See Appendix F). No attempt was made to refine the reliability of the medication record.

3. Sleep Record

It has been demonstrated that sleep patterns are sensitive indicators of both state and trait anxiety. Snyder states that the effects of abiding levels of stress or anxiety on sleep profiles are particularly interesting to psychophysiologicalists.

Therefore, a record was kept by the staff nurses of the duration and hours of sleep and wakefulness during a 12 hour time period, 1900 hours to

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0700 hours (See Appendix E). No attempt was made to determine the reliability of the sleep record, although an interesting comparison was available between the patient's assessment of his sleep and the nurse's recording of the hours of sleep obtained.

4. The Patient's Personal Daily Diary

During the data collection period, the patient was asked to keep a personal daily diary of his thoughts, feelings and emotions. He rated his general overall feelings on a Likert-type scale from 1 to 5. He then considered how he felt that day about treatments, pain anticipation and experience, anxiety and concern for self, family and future employment (See Appendix H).

The goals of the diary were:

a) To accumulate a daily account of the patient's reactions to burn treatment, including his perception of his pain, sleep patterns, need for medication and feelings of anxiety regarding his care and future.

b) To accumulate ongoing records of the patient's concerns as entered in the diary.

c) To determine if there is an evolving pattern of anxiety during the course of hospitalization.

The idea of a diary was suggested by a former patient during an interview. This patient wished that he had been able to keep a written record of his fears and anxieties during his hospitalization. To have been able to express these emotions on paper would have been helpful to him. Perhaps the opportunity to ventilate frustrations in writing at the end of the day may be therapeutic and reduce state anxiety.
The diary was kept over a period of data collection that is, not less than three weeks or more than one month. The patient was instructed to write in his comments and rate each answer to the question on a Likert-type scale. If the patient was unable to write due to burned hands, a relative was delegated this task.

The patient was given feedback by the investigator at the end of the data collection period as to the trends and fluctuations in his daily emotions.

Relative to the research plan, the diary supplied the patient's personal perceptions of the elements of the variable under study for comparison with the external measuring devices, namely the State-Trait Anxiety Inventory, the sleep and medication records and the staff's perceptions of the patient's anxiety level.

5. Nurses' Assessment of Anxiety

The nurse caring for the patient that day was asked to assess and rate her patient's level of state and trait anxiety on a Likert-type scale. This assessment was done at the beginning and at the end of the data collection period. (See Appendix G).

The purpose of this data collecting instrument was to compare the nurse's assessment of her patient's level of anxiety with the State-Trait Anxiety Inventory as well as the patient's self-perception of his anxiety from his daily diary.

The informational and support components of the instructional program were evaluated by means of a question and answer format. The investigator asked the patient questions pertaining to the section of the tape-slide program he had been shown. If the patient's answer satisfied the investigator and it was felt that he understood the information, the "yes" column of the format was checked. If the patient's reply did not satisfy the investigator, the "no" column was checked and further explanation or clarification was given. The patient was then asked to rate the helpfulness of the tape-slide program and the discussion following the program on a Likert-type scale. (See Appendix D).

Method of Data Analysis

The methodology was set up as a comparison. Appropriate statistical measures for comparison were utilized to test the null hypotheses.

The State-Trait Anxiety Inventory was scored as described in the accompanying manual. 108

The range of possible scores for Form X of the State-Trait Anxiety Inventory varies from a minimum score of 20 to a maximum score of 80 on both state and trait subscales.

A paired comparison between the means of the "state" scores may be determined by a one-tailed paired t test. The null hypothesis, that there is no measurable reduction of state anxiety over time, was tested at the .05 level of significance.

108 Spielberger, Manual for the State-Trait Anxiety Inventory, pp.4-5.
A comparison was made between the patient's opinion of his quality of sleep as expressed in daily diary and the amount of sleep recorded on the sleep record. A comparison of the means of these two variables was determined.

A comparison was made between the patient's opinion of his need for analgesic sedative medication as expressed in his daily diary and the amount of medication requested, as recorded on the medication record. A comparison of the means of these variables was determined.

A comparison was made between the patient's opinion of his degree of anxiousness as expressed in the daily diary and the level of anxiety measured by the State-Trait Anxiety Inventory. A comparison of the means of these two variables was determined.

A comparison was made between the staff nurse's rating of the patient's trait and state anxiety on a Likert-type scale on admission to the burn unit and the rating of the patient's state and trait anxiety by the State-Trait Anxiety Inventory. A comparison was made between the staff nurse's rating of the patient's trait and state anxiety on a Likert-type scale at the end of the data collection period and the rating of the patient's state and trait anxiety by the State-Trait Anxiety Inventory.

Overall trends among all patients were inspected for change. Evaluation of the content validity of the informational and support component of the instructional program was made from patients' comments about the program. Overall analysis of the comments in the patients' diaries were summarized. No statistical measures were applied to the evaluation of the instructional program or the analysis of the diary
comments. These, however, were utilized in an individual case study report organized around the concerns and reactions of each patient.

In summary, the method of data analysis was set up as a comparison. The null hypotheses were tested with appropriate statistical measures for comparison. Other data were inspected for observable trends.
Chapter 4

THE FINDINGS

Introduction

The findings of this study will be presented, firstly, in the form of individual case studies delineating an analysis of the data as objectively gathered by the data collecting instruments. Secondly, a subjective evaluation of the planned nursing interventions, as described through patient comments, will be presented. Thirdly, the statistical significance of the findings will be outlined in relation to the hypotheses of the study. Fourthly, a report and discussion of the findings addressing the behavioral phenomena exhibited by the patients will follow.

Since the State-Trait Anxiety Inventory Manual did not interpret the scores of the Inventory, the scores were interpreted arbitrarily by the investigator. The interpretation of the State-Trait Anxiety Inventory follows:

<table>
<thead>
<tr>
<th>STAI Scores</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 - 70</td>
<td>highly anxious</td>
</tr>
<tr>
<td>55 - 69</td>
<td>high-moderately anxious</td>
</tr>
<tr>
<td>45 - 54</td>
<td>moderately anxious</td>
</tr>
<tr>
<td>40 - 44</td>
<td>moderate-fairly anxious</td>
</tr>
<tr>
<td>35 - 39</td>
<td>fairly anxious</td>
</tr>
<tr>
<td>20 - 34</td>
<td>low anxiety/non-anxious</td>
</tr>
</tbody>
</table>
Regarding the sleep record, the investigator arbitrarily assumed that 6 hours or more was a "good sleep" and less than 6 hours was a "poor sleep." Sleep interruption due to nursing tasks was noted but not taken into account when judging the quality of sleep. Burn care requires that treatments be administered throughout the night.

Each daily diary was assigned a total score from the numbers on the Likert scale after each statement in the diary. The minimum score was 11, indicating a low anxiety level, and the maximum score was 55, indicating a high anxiety level.

**Evaluation of the Planned Nursing Interventions from Data Collecting Instruments**

**Patient One**

This 20 year old male was burned to 15% of his body. Second and third degree burns covered his hands, forearms and right flank.

Data was collected over a 21 day period, from the sixth day after admission to the day of discharge. The investigator visited this patient on DAYS 1, 3, 7, 10, 12, 14, 17 and 21.

**The Burn Treatment Administered**

- **DAY 1**
  - Saline compresses in the morning. Skin grafting in the afternoon to the right hand.
  - Evening arm bath to the left hand

- **DAYS 2-6**
  - Skin grafts rolled every 2 hours, later, every 4 hours
  - Morning tub bath followed by cleansing of the wounds and application of an antibiotic cream

- **DAYS 7-12**
  - Saline compresses to the back every 4 hours
  - Morning tub baths

- **DAYS 13-20**
  - Porcine dressings applied to the right side of the body.

- **DAY 21**
  - Patient to be discharged from hospital the next day.
Analysis of the State-Trait Anxiety Inventories

The raw scores of the "state" portion of the State-Trait Anxiety Inventory, hereforth referred to as the STAI, did not change dramatically over this patient's period of recovery. A consistent middle score, indicating a moderate anxiety level, was maintained.

<table>
<thead>
<tr>
<th>DAY</th>
<th>STAI</th>
<th>State Portion</th>
<th>Trait Portion</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>21</td>
<td>6</td>
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<td>40</td>
</tr>
</tbody>
</table>

State anxiety increased from DAY 7 to DAY 12 when the patient was undergoing compress treatment to his back. However, the 'state' score dipped to a low of 43 on DAY 17 when he was having tub baths.

On the day of discharge, the 'state' score rose to 48. The patient admitted to the nurses and investigator that he was anxious about leaving the security of the burn unit.

There was little change over time in the trait scores of the STAI. The scores were highest on DAY 1 and 10. The patient appeared very apprehensive about the application of skin grafts. This apprehension could have reflected on his answers to "trait" questions of the STAI on
DAY 1. It is noted that, on DAY 10, compresses to his back were in progress.

In summary, visual analysis of the raw scores of the STAI reveal little dramatic change over time. A rise in the state and trait scores toward heightened anxiety coincided with painful treatment. There was no remarkable change in trait anxiety over time.

Analysis of the Sleep Record

Over the 21 day data collection period, the patient only had 11 nights of "good sleep." Three nights of consecutive sleep loss occurred during DAYS 3, 4, & 5 when skin grafts were being rolled every 2 hours and during DAYS 9, 10 & 11 when compresses were being applied to his back. It was noted that both "state" and "trait" scores of the STAI were at their highest level on DAY 10.

Analysis of the Medication Record

From DAY 1 to DAY 7, analgesic medications were requested frequently by the patient. Sedatives and sleeping pills were given from DAY 1 to DAY 5. The patient began refusing sleeping pills after DAY 6. It was interesting to note that no analgesics were requested on DAYS 10 & 11 when compresses were being applied to his back. Only one analgesic was given by the nurse on DAYS 9 & 10. The patient requested only 3 analgesics over the 6 day compress period. After DAY 9, only 2 analgesics were requested by the patient.
Analysis of the Diary Scores

It appears that the diary scores peaked on DAY 4 and DAY 6, then rose again on DAY 10 and DAY 11. According to the nurses' notes on DAY 4, the patient was very shakey and nervous about his tub bath. Although he tolerated the debridement of his wounds well, he requested analgesics frequently. The nurses notes stated that, "the patient was writing in his diary, breathing deeply and whispering. He appeared angry but was not expressing his anger in words." He felt all pent-up, couldn't let out his feelings, was feeling very depressed and would love to cry but just couldn't. The patient wrote in his diary that the plastic dressing from his donor site had been removed and it was now very painful. The analgesics did help and the pain made him feel as if he was "going insane." The drainage from the exposed donor site was dripping between his legs; his back was sticking to the bed; he was anxious about his tub bath; he had a new nurse and was worried about her competence at dressing changes. Moreover, he was worried about his job and what would be his way of life. All these reasons, plus the dreadful pain, raised his anxiety level remarkably on DAY 4.

On DAY 6, he was uncomfortable with pain, again; felt very tired due to nightly dressing changes and subsequent lack of sleep, depressed, lonely, bored and thought that time was "so slow in passing."

On DAY 10 and DAY 11, the diary scores rose, indicating heightened anxiety. Compresses were being applied to his back at this time. He lacked sleep for three consecutive nights. However, the nurses' notes reported him as being cheerful, happy, talkative, and in good spirits. In his diaries, he complained of being itchy, irritable, in pain, bored
and depressed. Although he felt "awful," he wrote that he enjoyed talking with the investigator and that the visit "picked up my spirits."

It appears that the combination of debridement of the burn wound in the tub bath and the application of saline compresses to his back every four hours resulted in heightened anxiety. This was depicted by the scores of the STAI, diaries, sleep record and the expression of anxiety in the diary comments.

**Patient Two**

This 35 year old male was burned to 12% of his body. Second and third degree burns covered both calves circumferentially.

Data was collected over a 31 day period, from the fourth day after admission to the burn unit to the day before discharge. The investigator visited the patient on DAYS 1, 3, 7, 14, 17, 24, 29 and 31.

**The Burn Treatment Administered**

- **DAYS 1 - 3** - Burn baths followed by Polymixin compresses every 4 hours
- **DAY 3** - Surgery - debridement of both legs. Polymixin compresses resumed post-operatively
- **DAYS 3 - 5** - Compresses changed every 4 hours
- **DAYS 6 - 7** - Saline compresses
- **DAY 7** - Surgery - debridement of wounds and insertion of K-wires (surgical pins). Saline compresses resumed post-operatively.
- **DAY 8** - Legs suspended in traction. Skin grafts applied to legs.
- **DAYS 8 - 15** - Grafts rolled every 2 hours
- **DAY 15** - Daily burn baths resumed.
DAY 17 - K-wires removed.

DAYS 17 - 18 - Saline compresses applied to open areas between grafts

DAY 18 - Skin grafts applied to open areas

DAYS 18 - 23 - Skin grafts rolled every 2 hours

DAY 25 - Daily tub baths resumed.
            Patient mobilized

DAY 27 - First day of walking

DAY 31 - End of data collection.
            Day before discharge.

Analysis of the State-Trait Inventories

The results of the "state" portion of the STAI changed significantly over the patient's period of recovery.

TABLE 1-2
SCORES OF THE STAI

<table>
<thead>
<tr>
<th>DAY</th>
<th>STAI</th>
<th>State Portion</th>
<th>Trait Portion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>30</td>
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</tr>
<tr>
<td>31</td>
<td>6</td>
<td>32</td>
<td>39</td>
</tr>
</tbody>
</table>

It appears that state anxiety rose from DAY 1 to DAY 14. The patient was undergoing compress treatment to his legs from DAY 1 to DAY 8. After his skin grafts were applied and his legs suspended in traction on DAY 8,
the patient complained of severe heel and knee pain. This pain was prevalent from DAY 11 to DAY 14.

The "state" score of the STAI dipped a low of 22 on DAY 17. On this day, the K-wires were about to be removed, the skin grafts had taken well and the patient was sleeping longperiods during the night. The score of the STAI would indicate that the patient was at a very low level of anxiety.

On DAY 24, the "state" score rose to 38. It was noted that mobilization was about to begin. The patient looked forward with anticipation to walking again but also with apprehension. Furthermore, he expressed anger about the poor care he had received at another hospital immediately after his accident. The patient was considering a lawsuit. He also stated that he had been sleeping poorly lately due to the awkward position he had to maintain. Moreover, sleeping during the day hindered his nocturnal sleep.

The "state" score of the STAI was 32 on the day before discharge. The patient was cheerful, in good spirits but apprehensive about his imminent discharge. He appeared very restless, excited and fidgety. He stated that he couldn't keep still and was "very high."

There was little change over time in the "trait" scores of the STAI. The scores were the highest on DAYS 17, 24 & 31. It is interesting to note his lowest "state" score occurred on DAY 17. It was noted that as the "state" scores fell, the "trait" scores rose between DAY 14 and DAY 17.

In summary, visual analysis of the "state" scores of the STAI revealed a significant fluctuation in anxiety in response to the effects of
treatment stress. There appeared to be no remarkable change in the "trait" scores of the STAI over time.

**Analysis of the Sleep Record**

Over the 31 days of the data collection period, this patient had 12 nights of "good sleep." Three nights of consecutive sleep loss occurred three times. From DAY 18 to DAY 24, the patient had seven nights of consecutive sleep loss. Sleepless nights occurred when the burn wounds were being compressed, when the patient suffered painful heels and knees while in K-wire traction and when skin grafts were being rolled frequently.

"State" and "trait" scores of the STAI did not rise significantly during the sleepless period from DAY 1 to DAY 8. However, the score of the daily diary peaked dramatically on DAY 4, indicating a high anxiety state. On this day, it is noted that the compresses were being changed every 4 hours, the patient had a sleepless night and analgesics and sedatives were being given frequently.

**Analysis of the Medication Record**

Sedatives were administered to the patient four times a day from DAY 3 to DAY 16, and twice a day from DAY 17 to DAY 31. Sleeping pills were given every night over the data collection period. On DAYS 4, 5 & 10, the patient requested a sleeping pill.

It was noted that analgesics were given quite frequently from DAY 2 to DAY 7, during the compress treatment period. From DAY 8 to DAY 13, the patient requested analgesics frequently. During these days, his legs were suspended in traction, his skin grafts were being rolled frequently and his heels and knees were very painful.
On DAY 18, he began frequent requests for analgesics for three days. At this time, his K-wires had been removed one day before. Compresses to open areas on his legs, followed by skin grafting and frequent rolling of the grafts, occurred on DAY 18. No consecutive period of medication request was noted for the remainder of the data collection period.

Analysis of the Diary Scores

The diary scores "peaked" on DAY 4 and DAY 7, then rose again on DAY 16 and DAY 30.

It was noted that on DAY 4, 5, & 6, the patient was receiving compress treatment to his burn wounds post-operatively. On DAY 4, the nurses' notes reported the patient as being "extremely anxious, hyperventilating and asking for reassurance." The patient had little sleep the previous night. His diary score peaked on DAY 4 to its highest point over the recovery period. No comments were written in the diary. During a visit with the investigator on DAY 3, the patient expressed his anxiety about being "carved up" and "skinned" in the operating room. Later that day he expressed his fear of the pain and the anticipation of the surgical pinning.

On DAY 7, the score of his diary peaked again. Although his "trait" score of the STAI remained the same, his "state" score rose from 30 on DAY 1 to 36 on DAY 7. Since the patient was scheduled for his second surgery that afternoon, his compress treatments were still in progress. The nurses' notes reported the patient as being very anxious and complaining of thirst. No comments were written in the diary. The investigator visited the patient pre-operatively on DAY 7. The patient
stated that he was in severe pain and was trying to use a mental relaxation technique to divert his attention from the pain. However, he anticipated the surgery eagerly, stating that this was a turning point in his recovery. With the skin grafts on his legs, he thought that he would feel better, see more day to day improvement and feel less pain. Today was to be the last day of the "real pain" experience.

The diary score rose to 31 on DAY 16. It was noted that the patient was informed that his K-wires would be removed on the following day. He admitted that he was worried about the removal of the K-wires and the anticipation of pain on walking.

Diary entry was missed from DAY 18 to DAY 26 with the exception of DAY 24 when the investigator visited the patient. He felt miserable due to constipation and therefore had omitted his diaries.

On DAY 30, the diary score rose from DAY 19 to DAY 27. The nurses' notes reported that the patient appeared apprehensive about his discharge. On DAY 29, when the investigator asked the patient if he was worried about going home, he answered negatively. However, on DAY 31, the day before discharge, the patient admitted that he was very excited about going home. He was restless and fidgety.

In summary, the scores of the diaries fluctuated in response to the effects of treatment stress.

Patient Three

This 30 year old male was burned to 26% of his body. Second and third degree burns covered both hands, left forearm, back, neck and face.

Data was collected from this patient over a 25 day period, from the eleventh day after admission to the day before discharge. The investigator
visited the patient on DAYS 1, 4, 8, 11, 15, 18, 22 and 25.

The Burn Treatment Administered

<table>
<thead>
<tr>
<th>Days</th>
<th>Treatments</th>
</tr>
</thead>
</table>
| DAYS 1 - 10 | - Daily burn baths  
|           |  
|         |   Eye and ear care every 4 hours                                                              |
| DAYS 3 - 9 | - As above plus -  
|          |   Evening arm baths                                                                           |
| DAYS 5 - 11 | - As above plus -  
|          |   Saline compresses to neck and both arms every 4 hours                                       |
| DAY 10  | - Surgery - debridement  
|         |   - Skin for grafts taken                                                                      |
|         |   - Compresses resumed post-op to right forearm, left arm and neck                             |
| DAY 11  | - Skin grafts to above areas                                                                   |
| DAYS 11 - 25 | - Grafts rolled every 2 hours                                                                |
| DAYS 18 - 19 | - Compresses to left ear every 4 hours                                                       |
| DAY 19  | - Skin grafts to ear  
|         |   - Grafts rolled every 2 hours                                                               |
| DAY 20  | - Severe earache                                                                               |
| DAYS 22 - 25 | - Tub baths resumed                                                                          |
| DAY 25  | - Day before discharge.                                                                       |

Analysis of the State-Trait Anxiety Inventories

The scores of the "state" portion of the STAI did not change significantly over the patient's period of recovery. A consistent low anxiety level was maintained.
TABLE 1-3
SCORES OF THE STAI

<table>
<thead>
<tr>
<th>DAY</th>
<th>STAI</th>
<th>State Portion</th>
<th>Trait Portion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>25</td>
<td>6</td>
<td>21</td>
<td>25</td>
</tr>
</tbody>
</table>

Although the "state" score was highest on DAY 1, it did not change when the compress treatment period was initiated.

There was no significant change over time in the "trait" scores of the STAI. A "non-anxious" personality trait was maintained.

In summary, visual analysis of the STAI scores reveal no significant change, overall. It was noted by the investigator that, generally, there was little effect of treatment stress on this patient.

Analysis of the Sleep Record

Over the 25 days of the data collection period, the patient had twenty nights of "good sleep." There were no consecutive nights of sleep loss.

One night of sleep loss occurred on DAY 11 when the patient was in severe pain post-operatively. However, it is interesting to note that this patient still maintained a "good sleep" pattern from DAY 5 to DAY 10 when compress treatment was being administered. This is contrary to the other patients in this study who exhibited consecutive sleeplessness.
during the compress treatment period.

Analysis of the Medication Record

Analgesic medications were given to the patient frequently from DAY 5 to DAY 11, during the compress treatment period. Analgesics were not requested by the patient until he started to complain of a severe earache on DAY 21.

Sedatives were given to the patient three times a day from DAY 11 to DAY 21. Sleeping pills were given to the patient routinely over the data collection period. The patient requested a sleeping pill only on DAY 18 and DAY 19 when he was suffering from an earache.

Analysis of the Diary Scores

The diary scores rose on DAY 2 and DAY 10. On DAY 2, the patient wrote in his diary that he was suffering severe pain in the open area under his left arm. On DAY 10, the patient was suffering severe pain post-operatively. After surgical debridement of his wounds, compresses were frequently applied to his arms and neck.

On DAY 15, the diary scores rose again, but not significantly. The patient was asked to participate in a self-care program and was told he should be more independent. He was upset about a list of "independent activities" taped to the wall above his bed as well as the manner in which the self-care program was explained to him.

From DAY 16 to the day of discharge, the diary scores remained at a very low level. There appears to be no indication of increased anxiety when discharge from the hospital was imminent.

In summary, the diary scores did not fluctuate remarkably in response to the effects of treatment stress. This patient coped considerably well
with his treatments and his pain experience. Low "trait" scores, low "state" scores and low diary scores were consistent over the entire data collection period.

Patient Four

This 27 year old male was burned to 4% of his body. Second and third degree burns covered his right hand and forearm.

Data was collected from this patient over a 24 day period, from the first day after admission to the burn unit to the day before discharge. The investigator visited the patient on DAYS 1, 3, 7, 10, 14, 17, 21 and 24.

The Burn Treatment Administered

<table>
<thead>
<tr>
<th>Day</th>
<th>Treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAY 1 - 4</td>
<td>Daily tub bath</td>
</tr>
<tr>
<td></td>
<td>Evening arm bath</td>
</tr>
<tr>
<td>DAY 4</td>
<td>Surgery - debridement, insertion of K-wires, Skin for grafting taken from donor area, Saline compresses post-op</td>
</tr>
<tr>
<td>DAYS 4 - 6</td>
<td>Compresses every 4 hours</td>
</tr>
<tr>
<td>DAY 6</td>
<td>K-wire to traction</td>
</tr>
<tr>
<td></td>
<td>Skin grafts applied</td>
</tr>
<tr>
<td>DAYS 6 - 14</td>
<td>Grafts rolled frequently</td>
</tr>
<tr>
<td>DAY 14</td>
<td>Daily tub baths resumed</td>
</tr>
<tr>
<td></td>
<td>Evening arm baths</td>
</tr>
<tr>
<td>DAY 15</td>
<td>K-wire removed</td>
</tr>
<tr>
<td>DAY 16</td>
<td>Necrotic skin graft debrided</td>
</tr>
<tr>
<td></td>
<td>Saline compresses applied</td>
</tr>
<tr>
<td>DAY 17</td>
<td>Compresses during morning</td>
</tr>
<tr>
<td></td>
<td>Skin grafts applied in afternoon</td>
</tr>
<tr>
<td>DAYS 17 - 22</td>
<td>Grafts rolled frequently</td>
</tr>
<tr>
<td>DAY 22</td>
<td>Daily tub baths resumed</td>
</tr>
<tr>
<td></td>
<td>Evening arm baths</td>
</tr>
<tr>
<td></td>
<td>Patient moved to &quot;porch&quot;</td>
</tr>
<tr>
<td>DAY 24</td>
<td>Day before discharge</td>
</tr>
</tbody>
</table>
Analysis of the State-Trait Anxiety Inventories

The scores of the "state" portion of the STAI changed dramatically over the patient's period of recovery.

### TABLE 1-4

**SCORES OF THE STAI**

<table>
<thead>
<tr>
<th>DAY</th>
<th>STAI</th>
<th>State Portion</th>
<th>Trait Portion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>71</td>
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<td>7</td>
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<td>24</td>
<td>6</td>
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<td>37</td>
</tr>
</tbody>
</table>

An extremely high anxiety level was noted on DAY 1. At this time, the patient was receiving arm baths accompanied by debridement of the burns. On DAY 7, skin grafts, which had been applied the day before, were being rolled frequently. By the time the third STAI was administered, this patient's state anxiety was at a low level. This level was maintained during the remainder of the data collection period.

There was no remarkable change over time in the "trait" scores of the STAI. Trait anxiety was maintained at a "fairly anxious" level during the patient's recovery period.

Analysis of the Sleep Record

Over the 24 day data collection period, the patient only had 11 nights of "good sleep." Three nights of consecutive sleep loss occurred three times during the data collection period. These were after
admission to the burn unit (DAYS 1, 2 & 3), during compress treatment (DAYS 5, 6 & 7), and after the second skin grafting session (on DAY 17) when grafts were being rolled frequently. It was noted that the "state" scores of the STAI indicated heightened anxiety during these periods. The scores of the diaries also revealed a rise in anxiety level during these sleepless periods.

Analysis of the Medication Record

Analgesic medications were requested frequently by the patient during compress treatment on DAY 5 and DAY 6. After DAY 9, no analgesics were requested for the remainder of the data collection period.

Sleeping pills were given to the patient routinely from DAY 5 to DAY 24. The only time that the patient requested a sleeping pill was on DAY 9, when his skin grafts were being rolled every 2 hours. At no time were sedatives given to the patient.

Analysis of the Diary Scores

A diary score of 33 on DAY 1 indicated a high anxiety level. The investigator observed that the patient appeared very tense and anxious, tired from lack of sleep the night previous and worried about the future functioning and appearance of his hand.

On DAY 2, the diary score was 24. In the diary comments, he indicated that he had slept better during the night; he was generally feeling better and talking to the nurses. Moreover, he had gained a sense of security about his job after speaking to his employer on the telephone.

Although the diary score rose to 33, again, on DAY 3, the patient
appeared well rested, more cheerful and eager to talk to the investigator. He commented repeatedly, both verbally and in his diary, that he was worried about his surgery on DAY 4. The parts of the tape-slide program on "Skin Grafting" and "Splinting" were shown to the patient. He appeared very interested. Furthermore, the discussion following was fruitful. He stated that the teaching and emotional support, given to him at this crucial time, partially relieved his anxiety about the surgery.

The diary scores rose until DAY 5 when the highest score over the entire data collection period was reached. At this time, the patient was undergoing compress treatment post-operatively. The only comment in his diary was that his wounds were now much more painful.

Skin grafts were applied to his hand on DAY 6. Evidently he had completed the diary before the grafting procedure. He commented that the compress changes were very painful. He lacked sleep from the interruptions during the night as well as from the unbearable pain.

By DAY 7, the diary scores continued to decline. The grafts were being rolled every 2 hours. He wrote that the pain was a throbbing ache but bearable. His main concerns were the appearance of the skin grafts and the method that the doctor would use to remove the K-wire. Moreover, requests for analgesics had ceased. The "state" score of the STAI was down to 41, quite a decrease from a high of 71 on DAY 1.

The diary scores indicated a low anxiety until DAY 15. At this time, the K-wire from the patient's hand was to be removed. Furthermore, he was informed that some grafted areas on his hand had "not taken." Since he was looking forward to discharge by the end of the week, this information
was very disappointing.

On DAY 16, the necrotic grafts were debrided. Saline compresses to these areas were resumed. Diary scores continued to rise.

On DAY 17, the areas on his hand were re-grafted. He wrote that he was very depressed. This complication would mean a delay in his discharge from the hospital. He lacked three consecutive nights of sleep because the grafts were being rolled frequently.

By DAY 18, the diary scores were beginning to steadily decline. However, on DAY 22, the score rose slightly. It was noted in the diary that the patient was told that he would be discharged from hospital in three days. Although he was eager to leave the hospital, the patient did express concern about the ability of the knuckle skin graft to stretch and the functioning of his hand.

On DAY 24, the day before discharge, the patient denied any concerns or anxiety. He appeared cheerful and relaxed.

In summary, the scores of both the STAI and diary changed significantly in response to the effects of treatment stress. At the beginning of the data collection period, this patient was highly anxious. However, as recovery progressed, he maintained a moderate anxiety level.

Patient Five

This 60 year old lady was burned to 10% of her body. Second and third degree burns covered both anterior aspects of her thighs and perineum.

Data was collected over a 26 day period, from the third day after admission to a few days before discharge. The investigator visited the patient on DAYS 1, 6, 8, 12, 14, 19, 22 and 26.
The Burn Treatment Administered

DAYS 1 - 6 - Tub baths followed by cleansing of the burn wound and application of an antibiotic cream
DAYS 6 - 15 - Saline compresses to the thighs every four hours
- Tub baths in the morning
DAY 15 - Surgery - debridement of the burn wounds followed by application of saline compresses
DAYS 16 - 20 - Skin grafting followed by frequent rolling of the grafts
DAYS 21 - 25 - Tub baths resumed
DAYS 23 - 24 - Saline compresses to a small open area after necrotic graft removed.
DAYS 25 - 26 - Skin grafts to small area re-applied followed by frequent rolling.

Analysis of the State-Trait Anxiety Inventories

The scores of the "state" portion of the STAI changed significantly over the data collection period.

TABLE 1-5
SCORAGES OF THE STAI

<table>
<thead>
<tr>
<th>DAY</th>
<th>STAI</th>
<th>State Portion</th>
<th>Trait Portion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>26</td>
<td>6</td>
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<td>28</td>
</tr>
</tbody>
</table>

On DAY 1, the "state" score of the STAI was at its highest level.
The patient was highly anxious and nervous on admission to the burn unit.
The saline compress treatment was initiated on DAY 6, after administration of the STAI. On DAY 8, the patient's anxiety level had risen during compress treatment. Again, on DAY 14, the "state" portion of the STAI indicated heightened anxiety. At this time, the patient was informed that she would be going to the operating room early the next day. As recovery progressed, the scores of the STAI maintained a low anxiety level.

There was no significant change in the "trait" scores of the STAI over the data collection period. Trait anxiety was consistently maintained at a low level.

Analysis of the Sleep Record

Over a period of 25 days, the patient had twelve nights of "good sleep." It was noted by the staff nurses that she slept a great deal during the day from DAY 1 to DAY 8. The patient complained of being unable to sleep at night due to the extraneous sounds in her ward room. There were no nights of consecutive sleep loss during the first compress treatment period. However, from DAY 21 to DAY 26, this patient had six consecutive nights of sleeplessness. It was during this period that saline compresses were resumed after a small graft did not 'take.'

Analysis of the Medication Record

Sedatives were given routinely, three times a day to this patient over the entire data collection period. Requests for analgesics were noted during the first week of recovery. Analgesics were routinely given when compress treatment was initiated on DAY 6. By DAY 13, although compress treatment was still in progress, the patient began to refuse analgesic medication. When compress treatment was resumed on DAY 23, the patient was
routinely given analgesics before treatment.

Sleeping pills were given on DAYS 1 and 2. They were discontinued when the patient appeared to be drowsy and sleeping throughout the day. Sleeping medications were resumed on DAY 17 and given routinely for the remainder of the data collection period.

Analysis of the Diary Scores

Diary scores were consistently maintained at a low anxiety level from DAY 1 to DAY 14. Then, the scores peaked dramatically on DAY 15, the day of surgery. They remained high until DAY 17 when they gradually fell. By DAY 20, the diary scores were maintained near the level of the pre-surgery scores. The diary score rose on DAY 26 as the day of discharge grew closer.

Two diaries were not completed, on DAY 12 and DAY 13. At this time, the patient was very depressed when notified that her third degree burns would have to be grafted.

In summary, the scores of the diaries indicated a low anxiety level. However, it was noted by the investigator that this patient was laughing about her situation when she was really worried, stating that nothing was bothering her yet enumerating things which were. She over-reacted to a small area of skin graft rejection in comparison to other patients' response to similar or much more extensive circumstances.

Evaluation of the Planned Nursing Interventions from Patient Comments

It was apparent that participation in this study was beneficial for these patients from their comments. They expressed a great need to ventilate frustration, emotions and concerns regarding their burn,
treatment, skin grafting and nurse-patient relationship. The fact that the investigator was an unbiased person, not involved in their physical care, allowed them to ventilate and dispel their concerns.

All the patients stated that the tape-slide program and the discussion following were very helpful. They appeared very interested in the instructional program. The audio-visual aid stimulated questions and expression of concerns. Only one patient refused viewing of the part of the program on skin grafting. She feared that the photographs might "scare" her.

The first patient commented quite frequently about the helpfulness of the discussions with the investigator. He said that he looked forward to the visits because he "felt so good afterwards." Expressing his frustrations and anger to someone who was willing to listen, who accepted his emotions and who was non-judgmental relieved his tension. The nurses stated that the patient's disposition and attitude toward his hospitalization and the nursing staff changed positively since these visits were initiated. The staff stated that he concentrated hard on his diary responses. The patient commented that writing down his feelings in the diary was very helpful in relieving daily anxieties and tension.

The second patient also commented quite frequently about the helpfulness of the discussions with the investigator. The opportunity to ventilate his thoughts was good for him physically and emotionally. He felt that it is helpful for patients to talk about day to day frustrations, to express pent-up feelings and concerns, and to hear each procedure and phase of recovery explained beforehand.

He thought that the tape-slide program was "superb." It was helpful
to see what was going to happen before it took place. The section of the program on skin grafting and the discussion following decreased his anxiety greatly as indicated by the diary and State-Trait Anxiety Inventory scores.

This patient also stated that he looked forward to the visits. It was noted that, at times, the patient appeared drowsy when the investigator entered the room. During the visit, he perked up and became very talkative.

This patient's state anxiety and emotional disposition fluctuated in relation to the type of treatment he was receiving. Although the positive effects of the nursing interventions were expressed by the patient, these interventions did not have a great contribution in reducing state anxiety due to the effects of treatment stress.

The third patient was a very articulate and informative man. He always seemed to be in control of himself and his recovery experience. The investigator's visits with the patient were mostly information-giving sessions on his part. His use of medical terminology was amazing. He obviously knew a great deal about the purposes of his treatment.

He felt that it was helpful to discuss and analyze his feelings during visits with the investigator. He stated, "if I didn't get my bottled feelings out, I'd get the meemies." Ventilation of day to day frustrations and analysis of his thoughts to a person with the time to listen, was very important to him. For example, on two occasions the investigator found the patient lying in bed in a depressed mood, shaking his right foot. This action was his normal way of relaxing and decreasing tension. At the end of the visit, it was noted by the investigator that
the patient was smiling, joking and sitting up in bed. He had stopped shaking his foot. During the last visit, on the day before discharge, he said that patients need a "sounding board" to get frustrations out of their "system."

The fourth patient stated that he looked forward to the visits. Often, he appeared bored and depressed or angry when the investigator entered the room. By the end of the visit, the patient was smiling, laughing at his circumstances and fell asleep after the visit. This patient benefitted from participation in the research study in the following ways. He was generally sad, discouraged and often expressed anger at the onset of the visit. After the visit, his mood was generally elevated to smiles, laughter and expression of gratitude for an opportunity to share his feelings regarding his burn care.

The fifth patient often stated that the visits from the investigator would cheer her up and help boost her morale. Furthermore, the visit was the cheeriest part of her day.

She felt that Part I of the tape-slide program was "superb" and very helpful. She only wished that she had seen it as soon as she was admitted.

In summary, the informational and supportive components of the planned nursing interventions seemed to reduce emotional stress. The patients clearly indicated a need to ventilate their frustrations as a result of the effects of treatment stress. The positive effects of the planned nursing interventions were also reinforced by staff comments.
Statistical Analysis of the Findings

The analysis of the data centered around testing the seven null hypotheses. To test hypothesis one, using the score's of the "trait" portion of the State-Trait Anxiety Inventory, a paired t test was applied to the first three scores of all the patients and the last three scores of all the patients. To test hypothesis two, a product moment correlation coefficient was used to correlate the patients' scores on the "state" portion of the State-Trait Anxiety Inventory with the scores obtained on the diaries. The two tailed test was used and a significance level of .05 was considered acceptable to reject the null hypothesis. To test hypotheses three and four, product moment correlation coefficients were utilized to determine the strength of the correlation of the variables named in these hypotheses. Hypothesis five was apparent by inspection. To test hypotheses six and seven, product moment correlation coefficients were used to correlate the patients' scores on the State-Trait Anxiety Inventory with the nurses' assessment of patient anxiety on the Likert-type scale. A significance level of .05 was considered acceptable to reject the null hypotheses.

The statistical analysis of the data is presented in relation to each hypothesis.

Hypothesis One

The first null hypothesis tested was that,

There is no measurable change in trait anxiety over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support during the course of treatments as measured by the State-Trait Anxiety Inventories.
Trait anxiety was measured by the "trait" portion of the State-Trait Anxiety Inventory, administered six times to each patient. Table 2 lists the raw scores.

**TABLE 2**

<table>
<thead>
<tr>
<th>STAI</th>
<th>Patient 1</th>
<th>Patient 2</th>
<th>Patient 3</th>
<th>Patient 4</th>
<th>Patient 5</th>
</tr>
</thead>
<tbody>
<tr>
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<td>50</td>
<td>36</td>
<td>24</td>
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</table>

A paired t test was applied to the first three scores of all the patients and the last three scores of all the patients. At fourteen degrees of freedom, the t value was 0.000 with a T probability of 1.000. At the .05 level of significance, the critical value was 2.145. Since the difference between the means is not significant, the null hypothesis was not rejected. There was no change in trait anxiety over unit time. Therefore, no change in trait anxiety, or anxiety-proneness, occurred in a sample of burn patients over unit time.

**Hypothesis Two**

The second null hypothesis tested was that,

*There is no measurable reduction of state anxiety over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support during the course of treatments*
as measured by the State-Trait Anxiety Inventories and as indicated by the patients' personal diaries.

State anxiety was measured by the "state" portion of the State-Trait Anxiety Inventory, administered six times to each patient. The corresponding diary scores were tabulated for each patient. Table 3 lists the raw scores.

TABLE 3
TOTAL SCORES OF THE "STATE" PORTION OF THE STATE-TRAIT ANXIETY INVENTORY AND TOTAL SCORES OF THE DIARY

<table>
<thead>
<tr>
<th></th>
<th>Patient 1 STAI diary</th>
<th>Patient 2 STAI diary</th>
<th>Patient 3 STAI diary</th>
<th>Patient 4 STAI diary</th>
<th>Patient 5 STAI diary</th>
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</table>

A product-moment correlation coefficient was used to correlate the scores obtained by all the patients on the "state" portion of the State-Trait Anxiety Inventory with the scores obtained by all the patients on the corresponding diaries. At twenty-nine degrees of freedom, the finding was $r = .72$ which is a significant correlation at the .05 level of significance for a two tailed test. At twenty-nine degrees of freedom, the finding, $r = .72$, was also significant at the .01 level when compared to the critical values of $r$ at this level. Therefore, the null hypothesis was rejected at the .01 level of significance.

Furthermore, the first three scores of the State-Trait Anxiety
Inventory and the last three scores of the State-Trait Anxiety Inventory were tested with a paired t test. At fourteen degrees of freedom, the t value was 2.556 with a T probability of 0.0229. When the t value was compared to the critical values for t at the .05 level of significance, the null hypothesis was rejected at this level. Therefore, there was a reduction of state anxiety over unit time as measured by the scores of the State-Trait Anxiety Inventories.

Furthermore, the first three diary scores of all the patients and the last three diary scores of all the patients were tested with a paired t test. At fourteen degrees of freedom, the t value was 2.306 with a T probability of 0.0369. When the t value was compared to the critical values for t at the .05 level of significance, the null hypothesis was rejected at this level. Therefore, there was a reduction of state anxiety over unit time as measured by the scores of the diaries.

In summary, there was a measurable reduction of state anxiety over unit time in the sample of burn patients as measured by the State-Trait Anxiety Inventories and the diaries.

Hypothesis Three

The third null hypothesis was that,

There is no measurable increase in the hours of sleep over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support as measured by the nurses' observation on the sleep record and as indicated in the patients' personal diaries.

The scores of the patients' self report of sleep in the diaries were compared to the hours of sleep noted by the nurses on the sleep record. A product-moment correlation coefficient was utilized. There was no correlation, r 0.00, between the variables. Therefore, the null hypothesis
was not rejected. There was no measurable increase in the quantity of sleep over unit time.

**Hypothesis Four**

The fourth hypothesis was that,

There is no measurable reduction in expressed need for analgesic and sedative medication over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support as measured by the nurses' observation on the medication record and as indicated by the patients' personal diaries.

The scores of the patients' self report of need for medication were compared to the number of requests for medication as noted by the nurses on the medication record. A product-moment correlation coefficient was utilized. There was no correlation, $r = 0.00$, between the variables. Therefore, the null hypothesis was not rejected. There was no reduction in expressed need for medication over unit time.

**Hypothesis Five**

The fifth hypothesis was that,

There is no measurable indication of increased reported well-being over unit time in a sample of burn patients receiving exposure to an instructional program and psychological support as indicated in the patients' personal diaries.

The scores of the patients' self report of their general sense of well-being were inspected for change over unit time. No statistical measure was applied. In three patients there was a definite indication toward increased reported well-being. One patient maintained an "average" well-being and the other patient maintained a "fair to poor" well-being throughout the data collection period.
Hypothesis Six

The sixth hypothesis was that,

There is no correlation between the nurses' assessment of the patients' trait anxiety and the trait anxiety measured by the State-Trait Anxiety Inventories.

The scores of the "trait" portion of the State-Trait Anxiety Inventory were correlated with the scores of the nurses' assessment of patients' trait anxiety on the Likert-type scale. Table 4 lists the raw scores.

### TABLE 4

SCORES OF THE "TRAIT" PORTION OF THE STATE-TRAIT ANXIETY INVENTORY AND SCORES OF THE NURSES' ASSESSMENT OF TRAIT ANXIETY

<table>
<thead>
<tr>
<th>STAI</th>
<th>Patient 1 STAI Nurse</th>
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<td>LAST DAY</td>
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<td>39</td>
<td>1</td>
<td>25</td>
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</table>

Key:

<table>
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<tr>
<th>Low Anxiety</th>
<th>High Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAI</td>
<td>20 - 30</td>
</tr>
<tr>
<td>Nurse</td>
<td>not anxious</td>
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</table>

A product-moment correlation coefficient was utilized to compare the variables. At nine degrees of freedom, the value of $r$ was -0.43. When the value of $r$ was compared to the critical values of $r$ at the .05 level of significance for a one-tailed test, the correlation was not significant. Therefore, the null hypothesis was not rejected. There was
an inverse correlation between the scores of the "trait" portion of the State-Trait Anxiety Inventory and the nurses' assessment of trait anxiety.

Hypothesis Seven

The seventh hypothesis was that,

There is no correlation between the nurses' assessment of the patients' state anxiety and the state anxiety measured by the State-Trait Anxiety Inventories.

The scores of the "state" portion of the State-Trait Anxiety Inventory were correlated with the scores of the nurses' assessment of the patients' state anxiety. Table 5 lists the raw scores.

<table>
<thead>
<tr>
<th>DAY 1</th>
<th>LAST DAY</th>
</tr>
</thead>
<tbody>
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<td>Patient 1</td>
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<td>Patient 2</td>
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<th>Arbitrary Interpretation of Scores</th>
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<td><strong>Low Anxiety</strong></td>
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<td>Nurse</td>
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A product-moment correlation coefficient was utilized to compare the variables. At nine degrees of freedom, the value of \( r \) was \(-0.590\). When the value of \( r \) was compared to the critical values of \( r \) at the .05 level
of significance for a one-tailed test, the correlation was not significant. Therefore, the null hypothesis was not rejected. There was an inverse correlation between the scores of the "state" portion of the State-Trait Anxiety Inventory and the nurses' assessment of state anxiety.

By inspection, it was obvious that the nurses did not assess a similar amount of anxiety in burn patients as measured by the State-Trait Anxiety Inventory. The statistical correlation of \(-.43\) bears this out. Possible explanation for this include the fact that the nurse assessment tool was not validated or tested for reliability. Thus, the clinical assessment of anxiety, as measured by the State-Trait Anxiety Inventory, as compared with the clinical assessment of anxiety as measured by the Likert-type scale developed for the nurses, may not represent an inability of either tool to reflect clinical assessment of anxiety. This whole topic is a study in itself. Nursing ability to assess anxiety versus the ability of a formalized written anxiety assessment scale to assess patient anxiety was beyond the scope of this study.

**Psychological Phases of Burn Care in Hospitalized Patients**

The subjects were studied intensively on a daily basis over the period of their hospitalization. Psychological response to the burn injury varied markedly. Each patient passed through similar "phases." Although a small sample was studied, certain trends were evident from this study. Patients' comments about various sources of anxiety were repeated throughout the course of the data collection period. Therefore, the following report of the findings will be presented under various psychological phases of burn care.
Depersonalization Phase

In the initial reaction to burn injury, the patients passed through a phase in which they disengaged themselves from the facts of the situation. The patients seemed to function as if the situation had not happened to them personally.

For the first few days, the patients were rarely troubled about the future appearance, deformity or possible malfunction of a limb. Their concerns lay in the strangeness of the burn unit itself. They were most anxious to know about the expected length of hospitalization.

The most prominent source of anxiety at this time was fear of the unknown. Not knowing what to expect and lack of information about what was going to happen to them caused these patients great anxiety. One patient's eyelids were so swollen on admission to the burn unit, he could not see. He judged time by his burn bath schedule, the human traffic in the hallway and the automobile traffic outside. Not knowing what was happening to him and what treatment was to come next concerned him.

On admission, one patient seemed extremely nervous and hypersensitive to her circumstances. For the next week, she slept a great deal during the day. The nurses' notes reported a lack of appetite and apparent confusion when awake. Then, she became more alert, oriented and her appetite increased. She explained to the investigator that "by shutting herself off" from her surroundings, her "body was able to catch up" to her "soul."

Shortly after admission to hospital, all the patients seemed to have a need to verbalize, review and analyze the events surrounding the accident.
Two patients ventilated their frustration about their own carelessness for the cause of the accident. The other patients accepted the misfortune of their work-related accidents as "fate."

Reactive - Denial Phase

Latent reaction to burn injury was marked by inappropriate emotional reactions to self, staff and surroundings that were unfounded as far as the real situation went.

The investigator observed that these patients did not fully express an emotional upheaval in reaction to their burn injury. At first, all the patients seemed too accepting of and nonchalant about their injury. Then, a few days after admission to hospital, these patients seemed aware of the reality of their situation and began to employ various psychological defense mechanisms.

Schlichtmann\(^{109}\) substantiated this investigator's observation. The principal findings of Schlichtmann's study concurred with the conclusions found in the literature related to adaptation to stress and psychological impact brought on by burn injuries. Persons reacted to stress, first, by minimizing the impact of the situation, then, as they became aware of reality, initial emotional reactions were replaced by mechanisms that facilitated recovery.

The reaction of the first patient to his burn injury over his period of recovery fluctuated greatly. By the third day after admission to the burn unit, the nurses' notes reported the patient as being anxious,

\(^{109}\) Schlichtmann, "Adapative Mechanisms In a Selected Group of Burned Patients," p.379.
apprehensive and very concerned about himself. He became suspicious of the nursing staff and upset for not being told the type of medications he was receiving. He requested analgesics constantly and wondered if other burn patients have as much pain as he had. The next day, the nurses' notes reported the patient as being hostile, sarcastic, depressed, seeking attention and feeling very sorry for himself. At the beginning of the data collection period, this patient seemed to have regressed and had become very dependent on the nursing staff. Later, when self-care and independence were encouraged, he verbally lashed out at the nurses. He felt that the staff were against him.

At the beginning of the data collection period, the second patient seemed to deny the severity of, not only his grossly infected burns, but also the pain he was experiencing. Although he seemed very blasé and nonchalant to the investigator, the nurses' notes reported that this patient was extremely anxious. Although he was hyperventilating before treatment was initiated, he did not verbally react to pain. However, the "state" scores of the State-Trait Anxiety Inventory indicated a low anxiety level. Later, he began to freely discuss his frustration and anger about his previous hospital care. Moreover, his conversation became less inhibited. He began to realize the seriousness of his infected burn and to verbally react to the pain he was experiencing.

The third patient consistently seemed to be in control of himself and of his recovery experience. He seemed very accepting of his burn injury and therefore his emotions did not fluctuate widely.

On admission to the burn unit, the fourth patient was extremely anxious, tense and regretful. As stated previously, his initial concern
was the proposed length of hospitalization and not knowing what was going to happen to him. Then, he became concerned about the future appearance and functioning of his hand, especially in relation to his line of work.

The fifth patient was also extremely anxious and tense on admission to hospital. Her initial concern about the length of hospitalization was the same as the fourth patient; then, her main concern was the depth of burn and the possibility of skin grafting.

It was during this latent reaction to burn injury that some patients began to experience nightmares about their accident. During the first week of his recovery, the third patient was plagued with nightmares. He relived the accident when the memory of it would flash through his mind. It was helpful when he could talk about the nightmare to the nurses. They were able to re-orient him to his present surroundings when he was awakened during the night.

The first patient had re-occurring vivid dreams about the accident, but not nightmares. At times, he would wake up at night, reliving the accident. The second patient stated that thoughts of the accident would awaken him momentarily during the night. These three patients' accidents occurred at work and involved a great deal of trauma.

Williams\textsuperscript{110} reported that anxiety is high at night when the patient is alone, making it difficult for him to acquire his usual amount of dreaming sleep. Therefore, patients complain of nightmares.

Davidson also reported that many patients in her study expressed a wish to escape through sleep but were plagued by frequent nightmares which involved vivid reliving of the accident.

**Reality Testing Phase**

Several times during their recovery, the patients set goals and realized their personal limits in relation to the demands of burn treatment. This reality testing was usually relative to pain as pain was the predominant force in the burn patients' lives with appearance of the burn wound as a possible secondary force. However, concern about future appearance of the scar tissue was more apparent upon discharge.

In the reality testing phase, the greatest potentiates of pain and ensuing anxiety were the various burn treatments. Therefore, these will be discussed in relation to the pain experienced.

The nature and severity of pain varied considerably with burn patients. Some patients experienced their worst pain in donor sites after autografting. However, in this study, the patients complained of intolerable pain during dressing changes and debridement during bathing. Maintaining their distress from physical pain within manageable limits was a goal set by all the patients during their recovery period.

The third patient described his pain experience in vivid detail. He could not compare the pain to any he had suffered before. At times, he would think that his pain threshold had been reached but he was always able

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112 Ibid., p. 373.
to "put up with it a little longer." He described three types of pain:

1) a deep throbbing pain which felt searing and burning on the surface,

2) the tingling "pins and needles" pain when his burns were exposed to air,

3) the "nice," "acceptable" dull general ache after the skin grafts had been applied.

Pain was accentuated when he could not see due to his swollen eyelids and his anxiety was heightened due to fear of the unknown. When he was able to see again, he was amazed that he looked better than he had thought. At this time, the pain became more dull.

For this patient, waiting in anticipation of the pain of treatments was the worst part of each day. He would be depressed in the morning, wondering how severe the pain would be. His day was coloured by the pain experienced in the burn bath. If there was bearable pain, his spirits would lift and he would be in a good mood. Now he knew that the worst pain was over for that day.

The second patient denied the severity of the pain he was experiencing during the first week of the data collection period. However, the nurses' notes reported that the patient was extremely anxious and hyperventilating during treatments. The nurses' notes also reported that the patient did not verbally react to pain. Later, in the data collection period, this patient began to vividly describe his fearful anticipation of the painful treatments. He dreaded the treatment for an hour before it took place. His mouth became very dry as he hyperventilated. Since he was in constant pain for two hours afterwards, he was unable to concentrate or even converse
with his wife. However, when the nurses talked to him and described his progress during treatments, he felt that he had some control over his pain and had a goal to look forward to.

The first patient spoke often of his pain experience which he also described vividly. It was the most prevalent and predominant factor which affected him physically and emotionally. This patient seemed to be afraid of the pain that the treatments created rather than the treatments per se. He wrote in his diary,

"I am not afraid of my treatments, I know what they are; I am used to them and I know they will help me. But, I get a rush of fear - a fear of pain, that is."

As the pain subsided or became more tolerable, his disposition changed positively.

Neither the fourth or fifth patients described their pain experience in any detail. They did not deny that pain was present, but they preferred not to review their pain experience.

Perhaps the patients' reactions to their pain experience could be related to the terminology they used to describe their surgery. The second patient repeatedly referred to himself as a wounded animal being "skinned," "carved up" or "scalpeled" (cut with the scalpel). The third patient referred to himself as being "cut down to the meat." These two patients were very descriptive of their pain experience and consistently analyzed their pain to the investigator.

The effects of the various treatments were similar in all of the patients. Their emotional status and mood were dependent on the phase of treatment that was being administered. Obviously, some treatments were more painful than others. The following effects of treatment stress will
be presented in the sequence that they usually occur during burn care.

The Burn Bath

Generally, the patients enjoyed the burn bath (or whirlpool arm bath in the case of hand injuries). They stated that they felt clean after some of the collagen and exudate were removed. Moreover, the bath was relaxing and soothing.

However, the first patient considered the debridement of dead tissue during the baths and subsequent exposure of the burn wound as the most painful part of the treatment. The second and third patients considered their first burn bath as very traumatic because they did not understand what was about to occur. The third patient suggested that, since the burn baths were the worst part of the treatment phase, some method of diversion be employed. The sight of his wounds being debrided was painful physically and emotionally. Although this sight was all he could concentrate on, he realized that the more his wounds were debrided, the faster they would heal.

The fourth patient also confirmed that debridement during his arm baths was the most painful procedure. The fifth patient enjoyed her baths because the dressings were allowed to soak off.

During the preparation for and during the bath, the third patient found the sensation of alternating warm and cool distressing. Exposure to a cool hallway from a warm room to a warm bath and back to the cool air again was uncomfortable. Other patients also complained of shivering during re-application of dressings after the bath. They all wished more time had been allowed to soak and relax in the bath.
The Compresses

The "state" scores of the State-Trait Anxiety Inventory rose dramatically for most of the patients when compress treatment was initiated in preparation for skin grafting. The dressing changes were not only extremely painful, but they were also carried on throughout the night, thereby disturbing sleep.

The first patient commented that his compresses were painful but tolerable. The patient felt his body adjust to the bearable pain. The pain experienced seemed to depend on which nurse changed his dressings. Her ability to realize when his pain threshold had been reached was very important in his opinion.

The second patient exhibited an extremely anxious reaction to the pain of the compress treatment, as described previously. He tried to use a mental relaxation technique to divert his attention from the pain, however, he soon lost his concentration with this technique. His state of anxiety and emotional disposition fluctuated in relation to the type of treatment he was receiving.

The third patient, who demonstrated unusual control throughout his hospitalization, had extensive compress treatment. It was noted by the investigator that, generally, there was little effect of treatment stress on this patient. He coped considerably well with the treatments and the pain experience. Although he did state that debridement in the burn bath and during compress changes were unbearably painful, this patient did not overtly express suffering from pain.

The fourth patient did not have extensive compress treatment. When he did undergo this treatment post-operatively, he repeated the same
comments as the other patients regarding unbearable pain and pre-treatment anxiety. The only time he indicated in his diary that he needed analgesics was during compress changes since his wounds were now more painful. The fifth patient did not express pain either overtly or covertly. She refused analgesics even when her burns were compressed. It was noted by the investigator that this patient's moods fluctuated widely during the course of recovery. Realizing that compress treatment and subsequent skin grafting meant a longer hospitalization, she became depressed and withdrawn. It was during these periods of depression she refused analgesics. However, she did not express any untoward effects from compress treatment. A real question in the investigator's mind was whether this 60 year old, friendly, quiet, non-expressive lady was not experiencing pain or was denying it.

Surgical Pinning

The insertion of K-wires and subsequent suspension of an extremity (or extremities) in traction was a traumatic experience for two of these patients. Fear of the unknown was prevalent pre-operatively. Both patients expressed their fear of the pain with anticipation of surgical pinning and again when the pins were about to be removed. At these times, the "state" scores of the State-Trait Anxiety Inventories rose toward elevated anxiety. Sleepless nights and medication requests also ensued. The investigator felt that "pinning" was probably the most exaggerated reaction in relation to pain expected versus actual pain.

The patients complained of only a dull ache when their limbs were
in traction. One patient reiterated a portion of the tape-slide program when he later said, "bone has no pain nerves."

Skin Grafting and Rolling of Grafts

After painful compress treatments, the application of skin grafts was considered as a 'turning point' in the recovery phase for all of these patients. One patient thought that he would feel better, see more day to day improvement and feel less pain. Another patient reported that pain did lessen considerably after skin grafting. However, donor area pain was now more prominent. Regardless, his spirits lifted because now he could see his wounds healing.

Donor site pain with skin grafting is psychologically and realistically very painful. It is not physiologically accurate that patients should find "pins" more painful than the donor site.

There was no pain when the grafts were rolled (to remove exudate beneath the graft), only a tolerable dull ache. One patient stated he felt comfortable with this ache because he had been through the worst of his pain experience. He felt that his recovery was "downhill all the way now." He was "home free." This phase of his recovery was a "waiting period."

Another patient commented that after skin grafting, his pain was a bearable throbbing ache around his pinsites and at the time of rolling. His main concern was the appearance of the grafts. After he was informed that some areas were necrotic and would have to be re-grafted, he became very depressed and angry at the staff. Moreover, he worried about the ability of the new grafts 'to take.'
Frequent rolling of the grafts, especially during the night, resulted in interrupted sleep and more requests for medication. However, all the patients realized the necessity for rolling and accepted the procedure.

Decompensation Phase

In this phase, the patients adjusted over time to the ongoing stresses of their situation. After the acute stages of various treatments and after skin grafts had been applied to the wound, the patients entered into this phase of recovery one patient termed as "the waiting period." Time seemed to pass slowly at this stage as compared to the previous stages. Emotional trends were seen in most of the patients.

Philosophizing

Toward the end of the data collection period, the first patient became philosophical and introspective. He often wondered how this experience would change his outlook on life. In retrospect, he analyzed his pain experience and antagonistic reaction to the nurses. This patient apologized for his previous attitude toward the nurses and stated that his antagonism must have been a phase he was going through. Later, he thought of his future outside of the hospital. He dreaded the possibility of being in another accident and of having to go through this experience again.

The second patient referred to this experience as his "burn space" in relation to his total life. Every part of "life has a space and this burn space" had "boundaries" and was "finite." Later, he again reflected back over the course of his recovery and, in great detail, analyzed the pain he had suffered. Since he had stopped smoking during
his hospitalization, he commented that some good had resulted from his accident.

Another patient began to realize how lucky he was to be alive. Nothing could be a great problem compared to what he had gone through. He stated, "nothing is anything anymore after one realizes that he is alive after being thought dead. Life can be snuffed out so easily. Life cannot be replaced."

The fifth patient began to realize the magnitude of human suffering when people are burned. She also philosophized about the conditions surrounding her circumstances on the burn unit.

Boredom and Isolation

A sense of isolation and ensuing boredom seemed to plague these patients during the latter stages of recovery. Except for one patient, all were nursed in private rooms. The single patients suffered the most from loneliness, isolation and boredom.

The first patient felt detached from his environment and pre-occupied with his own gloomy thoughts. He wished that the nurses had time to stay and converse with him or that he could be allowed to converse with other patients. His sense of confinement was overwhelming. He seemed to thrive on visits with the investigator.

The fourth patient, also single, complained about his restricted movement allowed only in his room. He was pleased when he was allowed to roll his own grafts and release the traction on his K-wires in order to walk to the bathroom. This gave him a sense of mastery over a small portion of his burn care as well as "something to do."
It was interesting to note these men's reactions to transfer to the eight bed 'porch.' The second, third and fourth patients became roommates at the end of the data collection period. They seemed to enjoy talking to one another immensely as they reviewed each other's course of treatment and recovery. A 'men's club' atmosphere was prevalent. All wished they could have been able to boost each other's morale sooner.

Although she was nursed in the 'women's porch,' the fifth patient also spoke of a sense of isolation. She stated that she felt "cut off from the outside life." Activity in this open ward never ceased. There seemed to be too much sensory stimulation. Sensory underload as well as sensory overload was a predominant feature in the recovery of this burn patient.

Antagonism and Empathy

The importance of interpersonal dynamics between patient and nurse are paramount. When patients are hospitalized for a lengthy period of time, the patients' relationship with the doctors, nurses and physiotherapists become quite intense. The nurse has spent more time with the patient than anyone and potentially has the strongest influence on the rehabilitation process.\textsuperscript{113} Young\textsuperscript{114} noted that a relationship existed between the time the nurse has available to spend with the burn patient and the quality of the nurse-patient relationship.

\textsuperscript{113}Irving Feller et al, "The Team Approach to Total Rehabilitation of the Severely Burned Patient," \textit{Heart and Lung} 2 (September/October 1973) p.706.

Young's comment seems to be particularly applicable to the first patient's relationship with his nurses. He felt that the nurses did not have enough time to talk to him. However, he complained that they were always "coming in and doing something." Obviously, the quality of time and the quantity of time from this patient's perspective was important. He believed that the nursing staff disliked him and he became very antagonistic towards them. If a painful treatment was to be administered and he didn't get along with the nurse that day, he suffered more pain during the treatment. When self-care and independence were encouraged, he verbally lashed out at the nurses and felt that the staff were against him. As the day of discharge approached, he apologized for his previous attitude toward the nurses. He stated that his antagonism must have been a phase he was going through.

The second patient did not comment about his relationship with the staff. As a farewell gift, he drew a cartoon depicting the nurses as 'angels of mercy.'

The third patient clearly indicated to the investigator who his favourite nurses were. He had great confidence in their ability to minimize pain with skill and sensitivity toward his pain tolerance. These nurses knew when his pain threshold had been reached and would therefore stop debridement of the wound. The nurses who talked to him during dressing changes worked with him. Her acceptance of his instructions about which method of dressing change was the least painful allowed him to have some control over his pain and treatment. If the nurse was willing to be flexible in this way, the patient did not anticipate his treatment with the same fear.
When his skin grafts did not 'take,' the fourth patient verbally harrassed the doctor and nurses. He expressed a great deal of anger against the staff at this time. However, when it was apparent that the new replacement grafts were healthy, he praised the staff highly. At no time did the patient indicate fear of his treatments. In fact, he looked forward to talking to "those good-looking nurses."

**Discharge Anxiety**

In three cases, the patients' anxiety levels rose when notified of their discharge day. The concerns of these patients revolved around the appearance of the scar tissue and the social acceptance of the Jobst elastic garment on the part of their friends.

The first patient told the nurses and the investigator that he was anxious about leaving the security of the burn unit. Routines had become predictable. He was afraid of the "outside world" and the possibility of another injury. Moreover, the fact that he would have to wear the Jobst glove for at least a year and refrain from lying in the sun bothered him. This alteration in body image was threatening. He worried about the appearance of his scars to other people, especially his girlfriend. The glove and scars would be a constant reminder of his injury.

Although the second patient's "state" score on the State-Trait Anxiety Inventory revealed a low anxiety level, and he denied feeling anxious, this patient seemed very restless and fidgety. The nurses' notes reported that he appeared apprehensive about his discharge.

At first, the fourth patient was concerned about the appearance of his grafted hand to other people. Although he inquired about the purpose
and appearance of the Jobst® glove, he later denied concern about the glove or the appearance of his rough scar tissue.

After skin grafts had been applied to her wounds, the fifth patient referred to the healing area as "an unsightly mess." She was worried about the appearance of the scar tissue, especially when she went swimming.

It was apparent that concerns about alteration in body image and social acceptability of the burn scars were prevalent at the time of discharge. The necessity of wearing an elastic glove for a year was a threatening forecast. In the hospital, these patients were secure with the staff who showed no qualms or "disgust" at their "unsightly mess," as one patient termed her skin grafts. Now, these patients were about to leave the security of the hospital and enter the environment of friends, family and strangers. The question predominant in their thoughts was, "will people turn away when they see the glove and burn scars?".

**Discussion of the Findings**

The concept of the changing intensity of anxiety in response to burn injury and treatment was an important finding in this study. There appeared to be a threshold of anxiety, unique to each patient, beyond which defense mechanisms were called into play. Therefore, the following discussion will be partially based on the report of the findings and presented as behavioral responses of burn patients to alteration in body image, loneliness and sensory deprivation. Defense mechanisms employed by the patient to reduce anxiety as well as discharge anxiety on departure from the hospital will also be discussed.
Alteration in Body Image:

Body image is the constantly changing total of conscious and unconscious information, feelings and perception about one's body as different and apart from all others. Body image is basic to identity and plays an important role in determining an individual's sense of security and self-esteem. A burn injury forces restrictions on a patient's sense of freedom. He is now forced to assume a dependent role on things and people.

Disfigurement brings unique changes in body image. The anxiety of most patients at a moment of crisis creates tunnel vision; they see or hear nothing else at the time. The sudden change in body image also produces a distortion of self. A wide range of behaviors such as despair, discouragement, passive acceptance, anger and hostility may be detected by the nurse. In this study, the first patient reacted with verbal anger and hostility toward the nurses whereas the fifth patient passively accepted her situation. Two other patients seemed to disassociate their bodies from the situation by referring to themselves in 'animal' terminology.


117Ibid., p.83.
Roberts also noted that it is difficult for the burn patient to see improvement in his own condition. Seeing only the obvious changes in his body image, he becomes discouraged and passively accepts events in his environment. Since the burn care team focuses its attention on therapy, grafting, and rehabilitation, the burn patient has difficulty visualizing the end results of these endeavors in the distant future.

Roberts also noted that the burn patient fears that his physical injuries and possible disfigurement will isolate him socially. The once whole body has been rendered imperfect. All he sees are the ugly burns which serve as a constant reminder of his imperfection. As reported earlier, the first patient was concerned about the reaction of his girlfriend to his scars. The fifth patient, an avid swimmer, was equally concerned about the appearance of her legs. This patient, however, tended to divert the investigator's conversation away from the topic of the effect of the burns on her emotional status. "Threats may force the patient to avoid reality by retreating into peripheral areas, topics of discussion that focus on something or someone other than the patient himself."

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118 Roberts, Behavioral Concepts and the Critically Ill Patient, p. 83.

119 Ibid., p. 84.

120 Ibid., p. 85.
Combs and Snygg noted that patients who analyze the events surrounding their accident are trying to give some meaning to the accident from the relation they perceive between the accident and themselves. Four patients in this study discussed in detail the events surrounding their burn accident. They seemed to analyze and search out a relationship between themselves and the fate of their injury. This analysis became a chance to philosophize about their life in general.

Loneliness

Illness not only implies a physical trauma; it also implies a psychological trauma. Illness and threat of loss or disfigurement create both psychological and physiological pain. Both types of pain which were real experiences to the individual, narrow perception, impose isolation, cause withdrawal and focus attention on the individual. A usual outcome is the creation of feelings of loneliness.

Loneliness, which all the patients in this study expressed, seemed to help them look within themselves and philosophize about their "space" in life. "As a man communes with himself, he discovers life, who he is, the meaning of his existence and the true nature of his relation with others."

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121 Roberts, Behavioral Concepts and the Critically Ill Patient, p. 88
122 Ibid., p. 142.
The first patient's sense of isolation and loneliness was overwhelming. He longed for conversation with the nurses and thrived on visits with the investigator. The fourth patient was bored and frustrated with the slow progress of his recovery. The fifth patient felt "cut off from the outside life." Loneliness created an anxiety within these patients. Even though they were physically close to the staff and other patients on the burn unit, loneliness made them feel as if they were in another world.

Sensory Alteration

Sensory alteration is defined as "an absolute reduction in variety and intensity of sensory input, with or without a change in pattern." Although his hearing is not impaired, a burn patient can experience either a reduction or overstimulation in visual and bodily sensation. As reported earlier, the third patient, in this study, was unable to see due to severe edema of his eyelids. He was unable to perceive changes or happenings within his environment. He had no visual frame of reference. At first, he heard sounds but did not know their significance or location. Then, he began to judge time on the basis of the human traffic in the corridor and the automobile traffic outside. Moreover, his body sensations were distorted due to his burns. The sensations of heat and cold were intensified during preparation for and after his burn bath. He stated that his sensation of pain was also intensified because "blindness" deprived him of his vision.

"Because of the reduction in amount and intensity of stimulation, the patient may withdraw into sleep." Perceptual monotony may cause the patient to become inattentive to the environment. The fifth patient slept a great deal during the day for a week after admission. She explained to the investigator that by "shutting herself off" from her environment, her "body was able to catch up" to her "soul."

Another patient also commented to the investigator that he was unable to sleep at night because he had slept so much during the day. He said that sleeping helped pass the time. It was this patient who suffered the most from an overwhelming sense of boredom, isolation and loneliness.

Roberts noted that when stimulation is reduced, "the resulting behavior is boredom, inactivity and sleep. Sleep offers its own stimulation. At least in sleep the patient can dream. Sleep also helps pass the time which, to the patient, seems to stand still. Furthermore, sleep is an acceptable way to withdraw from one's monotonous environment."

**Defense Mechanisms**

According to Lazarus, "Defenses are psychological manoeuvres in which the individual deceives himself about the actual conditions of

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125 Roberts, *Behavioral Concepts in the Critically Ill Patient*, p. 279
126 Ibid., p. 280.
127 Ibid., p. 286.
threat. In this way, harm is not anticipated, either from an external or an internal source."

Denial is a defense mechanism operating outside of and beyond conscious awareness in the endeavor to resolve emotional conflict and allay anxiety. It is a normal coping behavior by which the adaptive process is brought about. Therefore, denial serves to decrease the individual's anxiety level.129

As stated earlier, the patients, in this study, did not fully express an emotional upheaval in the initial reaction to their burn injury. At first, they seemed too accepting and nonchalant. One patient clearly denied the severity of his burns and his pain. Another patient skillfully steered conversation away from discussion of the emotional impact of her burn injury and the possibility of skin grafting. Pre-operatively, she refused any teaching about post-operative care, including viewing of the portion of the tape-slide program on skin grafting. In both patients, denial may have minimized the anxiety provoking aspect of the reality that constituted a threat. Furthermore, denial may have served as an effective protection against overwhelming anxiety.130

Hostility is defined as "a response to subjectively experienced humiliation. A person thinks that another person does not have the expected respect for him. Rather than feel anxious, he feels and/or expresses hostility."131

129 Roberts, Behavioral Concepts in the Critically Ill Patient, p. 182.
130 Ibid., p. 192.
131 Ibid., p. 201.
The patient, therefore, projects blame for his situation onto someone in his environment.

The dependency role, forced upon them by their injury, aroused feelings of hostility and anger in two patients. One patient displayed verbal hostility toward the nurses several times. He believed that the nurses disliked him and were 'against' him. If a painful treatment had been administered and if he didn't get along with the nurse who administered the treatment, he suffered more pain during and after the treatment. Therefore, he believed the nurse created his intense pain.

Another patient displayed anger when a nurse came into his room, without warning, and removed his necrotic skin graft. In his anger, he projected the blame for the failure of his skin graft to 'take' on the staff. The expression of "anger reveals a sense of frustration in attempting to achieve a goal that has been obstructed."132

Hostility and anger are psychological defense mechanisms that serve to mask the vagueness and powerlessness of anxiety. Threats to the patient's psychological, biological and social integrity become overwhelming. Such awareness enhances his already existing feelings of anxiety. Therefore, anxiety makes the patient respond in abnormal ways.133

132 Roberts, Behavioral Concepts and the Critically Ill Patient, p. 203.
133 Ibid., p. 209
Discharge Anxiety

In this study, three patients' anxiety levels rose when notified of their discharge day. After nearly a month of hospitalization, these people had become comfortable in their familiar surroundings. They had also become familiar with the staff providing their care. Now, the patients realized they were about to leave their secure and predictable surroundings. While feeling secure in this protective environment, they had regarded the burn unit as a "haven of safety." They had depended on the nurses' knowledge, competency and skill in providing care. Therefore, the abrupt termination of this emotional attachment to their environment and the staff appeared to result in increased anxiety.

One patient was afraid of the "outside world" and dreaded the possibility of another injury. He and the other patients worried about the response of strangers and significant people in their lives to the disfigurement left by the scar tissue. These patients faced a threat to their social integrity with the possibility of rejection and social isolation.

Summary

The findings of this study clearly indicate that even the less severely burned patient experiences emotional turmoil during hospitalization. The identification and accumulation of information about anxiety producing stressors, as perceived by these patients, has been very revealing. The implications for the nurse in reducing the effects of treatment stress are substantial.
Chapter 5
SUMMARY RECOMMENDATIONS CONCLUSIONS

Summary

The primary purpose of the study was to investigate the effectiveness of an instructional program providing treatment information and psychological support in reducing the effects of treatment stress for burn patients. Identification and accumulation of information about anxiety producing stressors during hospitalization, as perceived by the sample of patients, was another major outcome of the study.

The instructional program allowed the five patients not only to prepare for new phases of burn treatment but also, due to the presence of the investigator, to ventilate thoughts, pent-up emotions and frustrations to an objective person not involved in daily physical care. Therefore, evidence of the effectiveness of these planned interventions lie in subjective evaluation of the instructional program by the patient as well as objective evaluation of the program by statistical measurements.

Since a descriptive approach was selected, it was not the sole purpose of the study to convincingly demonstrate that the planned nursing interventions did indeed reduce anxiety due to the effects of treatment stress. It became increasingly difficult to identify behavior related solely to the effects of treatment stress since it was the burn with its all-encompassing pain that dominated the situation. Nevertheless, the statistical measurements applied to the numerical data
produced by the State-Trait Anxiety Inventories and the diaries indicated a trend in state anxiety over unit time in the sample of burn patients. However, it appears that there is no measurable change in trait anxiety over time. In other words, there was no change in the patients' trait anxiety during recovery from a burn injury.

Moreover, there was no measurable increase in the hours of sleep and no measurable decrease in expressed need for medication over unit time. Sleep and medication requests fluctuated widely from day to day during the recovery period. Extraneous variables such as the initiation of a new treatment, a relapse in recovery, such as an infection or a rejection of a skin graft, as well as disturbance during the night due to routine treatments, hindered reliable and valid measurement of these indicators of anxiety.

Patients' comments as to the helpfulness of the instructional program and psychological support were another source of evidence of the effectiveness of the program in reducing anxiety due to the effects of treatment stress. As reported in the previous chapter, there were many overt and covert indicators upon which the investigator drew in order to evaluate the effectiveness of the planned visits with the patients. Furthermore, these patients were unanimously in favour of the usefulness of the tape-slide program and the discussion following.

The nurses' assessment of the patients' trait and state anxiety was somewhat inversely related. This suggested that the nurse caring for the patient was either not assessing state anxiety as interpreted by the investigator or not aware of the patient's true anxiety level compounded by a nurse-rating scale of unknown reliability and validity.
There were many anxiety producing stressors during hospitalization as perceived by the patients. Generally, the stressors were associated with burn treatment and patient-nurse relationships. Since these patients' lives at this time revolved around their burn injury and the people caring for that injury, these stressors were to be expected. The attitudes, actions and statements of staff members had a great bearing on the rapidity with which a trusting relationship developed and the extent to which this relationship progressed.

Furthermore, the patients passed through similar phases during the recovery period. Trends among all these people were seen throughout the entire data collection period. However, interpretation of the findings must be done with caution due to the small number of patients in the study. (N=5).

**Recommendations**

In light of the findings of this study, the following recommendations were made.

Firstly, a nurse, not responsible for the patients' daily physical care be available in order to provide informational and supportive nursing interventions as implied in this study. The distinction as to whether or not this "supportive nurse" should be a psychiatric nurse specialist remains unresolved. Nevertheless, the approach to a patient's emotional problems may be better organized and more consistent when the patient has established a therapeutic rapport and interaction with a nurse who does not represent a source of treatment stress leading to pain. Also, those responsible for physical care may be better able to
cope with the patient's daily frustrations and anxiety if major emotional disruption has been successfully handled.

Secondly, a continuing in-service program for staff nurses and physiotherapists should be initiated to enhance their understanding of the psychology of the burn patient and phases he may be expected to pass through. Emphasis should be placed on psychological defense mechanisms and behavioral responses the patient may exhibit while trying to adjust and cope with his anxiety. How the patient handles the pain and stress of treatments may depend on what the nurse does in assisting him to cope with the experience.

Thirdly, some stimulating diversional technique should be utilized during the burn bath to help the patient focus his attention away from the debridement and accompanying pain. As one patient suggested, a person, engaged in conversation with him during the bath, would provide a welcomed diversion.

It was recommended by another patient that a former burn patient, who has recovered physically and psychologically, be asked to visit selected hospitalized patients upon request. This former patient may boost the morale of the hospitalized patient when living evidence is provided that even severely burned patients can and do learn to resume normal lives and acquire an acceptable appearance.

Fifthly, earlier contact with other patients on the burn unit, when feasible, would help decrease the patients' sense of isolation and boredom. The patients may be able to mobilize an optimistic attitude through realization that others have been burned and are in the same situation.
The latter three recommendations were suggested by the patients themselves. A great depth of insight and understanding of their own emotional needs and behavioral responses as well as the physical aspects of burn care, was gained by these individuals. Their suggestions to enhance the provision of total burn care, both physical and psychological, were very worthwhile. Therefore, attention to the emotional needs of these patients, early in the recovery phase, will facilitate their adjustment to the burn injury and its consequences.

Implications for Further Study

Replication with a larger study sample is needed to confirm the findings since generalization of the findings to the target population has not been attempted.

Since it was recommended that a nurse, not responsible for daily physical care, be available to provide therapeutic psychological support, a study should be conducted to determine which type of nursing expertise would be most effective in relieving the effects of treatment stress. An experimental study could compare the relative effectiveness of a psychiatric nurse specialist versus a non-specialist nurse in order to determine which distinction of nurse would best serve the purpose.

Furthermore, the literature lacks information about not only the emotional responses of the less severely burned patient, but also the post-discharge phase of recovery in all burn patients. Permanent individual and family changes of lifelong importance may ensue as a consequence of burn injury. Therefore, more follow-up studies are needed to determine the problems, both physical and psychological, that these
patients face after discharge from hospital.

Little research attention has been given to the emotional problems of severely burned patients with gross physical disfigurement. It was apparent in this study that alteration in body image concerned even the less severely burned patient. Moreover, no information about the effects of the necessity of wearing the Jobst® elastic garment for approximately a year is available in the literature.

Conclusions

The findings of this study indicated that even less severely burned patients suffer intense psychological response to the burn injury and great anxiety during hospitalization. Planned nursing interventions, provided by a person not responsible for daily physical care, reduced that anxiety attributable to the effects of treatment stress. Since a person who has been burned confronts multiple stresses and profound suffering, psychological support, explanation and reassurance from family and staff members are paramount in the total care of this individual.
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Hamburg, David; Artz, Curtis; Reiss, Eric; Amspacher, William; and Chambers, Rawley. "Clinical Importance of Emotional Problems in the Care of Patients with Burns." New England Journal of Medicine 248 (February 26, 1953):355-359.


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ADDITIONAL SOURCES


CONSENT FORM

I do agree to participate as a subject in this study conducted on the Burn Unit of the Vancouver General Hospital by Barbara Peeling, R.N. It has been explained to me that the purpose of this study is to acquire knowledge about the effects of burn treatments and methods of reducing treatment stress.

I understand that participation in this study involves answering the same brief questionnaire six times over a period of one month as well as keeping a diary regarding my reactions to treatment.

The results of the study will be confidential and anonymous.

I understand that I am free to withdraw from the study at any time.

________________________________________
Signature

________________________________________
Witness

________________________________________
Date
**SELF-EVALUATION QUESTIONNAIRE**

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

**STAI FORM X-1**

<table>
<thead>
<tr>
<th>NAME</th>
<th>DATE</th>
</tr>
</thead>
</table>

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

<table>
<thead>
<tr>
<th></th>
<th>NOT AT ALL</th>
<th>SOMEWHAT</th>
<th>MODERATELY SO</th>
<th>VERY MUCH SO</th>
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<tbody>
<tr>
<td>1. I feel calm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I feel secure</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. I am tense</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. I am regretful</td>
<td></td>
<td></td>
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<tr>
<td>5. I feel at ease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I feel upset</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I am presently worrying over possible misfortunes</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8. I feel rested</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>9. I feel anxious</td>
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<td>10. I feel comfortable</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11. I feel self-confident</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12. I feel nervous</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. I am jittery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. I feel &quot;high strung&quot;</td>
<td></td>
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<td>15. I am relaxed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. I feel content</td>
<td></td>
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</tr>
<tr>
<td>17. I am worried</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>18. I feel over-excited and &quot;rattled&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. I feel joyful</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. I feel pleasant</td>
<td></td>
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</tr>
</tbody>
</table>

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# SELF-EVALUATION QUESTIONNAIRE

## STAI FORM X-2

**NAME ______________________________________ DATE __________________**

**DIRECTIONS:** A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

<table>
<thead>
<tr>
<th>Statement</th>
<th>ALMOST NEVER</th>
<th>SOMETIMES</th>
<th>OFTEN</th>
<th>ALMOST ALWAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. I feel pleasant</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. I tire quickly</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23. I feel like crying</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. I wish I could be as happy as others seem to be</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. I am losing out on things because I can’t make up my mind soon enough</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26. I feel rested</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27. I am “calm, cool, and collected”</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28. I feel that difficulties are piling up so that I cannot overcome them</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>29. I worry too much over something that really doesn’t matter</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>30. I am happy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>31. I am inclined to take things hard</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>32. I lack self-confidence</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>33. I feel secure</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>34. I try to avoid facing a crisis or difficulty</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>35. I feel blue</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>36. I am content</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>37. Some unimportant thought runs through my mind and bothers me</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>38. I take disappointments so keenly that I can’t put them out of my mind</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>39. I am a steady person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>40. I get in a state of tension or turmoil as I think over my recent concerns and interests</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

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APPENDIX C
PART I: ORIENTATION TO THE BURN UNIT

We'd like to help orient you to this hospital ward & to inform you of some of the treatments you will receive. Your nurse will explain all procedures to you and answer any questions.

The Burn Unit of the Vancouver General Hospital is located on the fourth floor of the Fairview Pavilion.

This unit is considered an "isolation" ward. Each room in the corridor is a single room. At each end of the corridor is an 8 bed open ward called "the porch."
You may move from your single room into the porch when you do not need extensive nursing care. This will be a step forward in your independence and part of your rehabilitation. One or two nurses are assigned to all of the patients here.

There is also an intensive care unit on this ward for critically ill patients.

You may have noticed visitors and nurses wearing gowns and masks.

On isolation wards, precautions are taken to help prevent the spread of infection as well as protecting our patients from contacting further infection.
When the nurse or visitor is about to leave the room, the gown is removed and placed in a linen bag hanging on the wall in the room.

Those involved in caring for patients with burn injuries include the plastic surgeon, the burn resident doctor, nursing staff, physiotherapists, dietitians and social workers.

These people will make "rounds" and discuss your care as a team as well as answer any questions.

Your length of stay is variable. It depends on your treatments and rate of healing.
A burned area destroys various layers of skin. Your treatment depends on the extent of injury.

A first degree burn is only a redness, similar to a sunburn and will heal in about 5 to 7 days.

A second degree burn involves the deeper layers of the skin and produces a "blister burn." A second degree burn will usually heal in about 10 to 14 days.
A third degree burn involves complete destruction of the first two layers of the skin and penetrates the fatty tissue beneath.

Various pain medicines are available to ease your pain. Since some are addictive narcotics, you will be given different medications as healing takes place.

Your burn areas may be covered by bandages or dressings - usually wet compresses. The nurse will probably wear a sterile green surgical gown and mask since your burned area will be exposed.

The dressing tray has various bowls of solutions, instruments, ointments and pads.
It will be necessary for her to debride or remove any dead skin, and cleanse the area well before applying fresh dressings.

Usually dressings are done every 4 hours but may not be at a specific time every day. You are not being neglected if priorities have to be set for other patients.

Exercises must be done every 4 hours. The physiotherapist will instruct and assist you.

There are specific exercises and they are important to prevent tightening of burned areas and to maintain good movement in the fingers, hands and legs.
Your healing skin may be itchy at times. A greasy ointment is applied to keep it smooth and lubricated.

Tensor bandages or elastic stockings will be applied to the legs after healing has taken place. They are applied whenever you are walking to provide support to the newly healed tissue.

Good nutrition and fluid intake are very important in helping new tissue grow. Milk is an important part of your diet and you are encouraged to drink it daily.

Feel free to ask your nurse or doctor any questions you may have. You are part of the team in an effort to provide you with the best possible care. Your mature assessment regarding your condition, when shared openly with other members of the team, will add greatly to the speed and success of your recovery.
PART II: THE BURN BATH

One of the most common treatments on the unit is the Burn Bath. You will be placed in a very large whirlpool tank where your burn wounds are cleansed.

The tank is filled with warm water. The water looks orange due to a medical solution added. It is not rust.

The trolley on the ceiling helps the nurses move you on a portable stretcher and lower it into the bath. You will stay on this metal cot while in the tank.

The warm, bubbling water stimulates circulation. The nurse will debride the dead tissue from your wounds as well as cleanse them.
The warmth of the water and natural buoyancy will enable you to exercise easily with supervision by the physiotherapists.

You will then be removed from the tank the opposite way to which you were put in. The nurse will dry you entirely and cover you with a flannel sheet.

Once back into your room, your dressings will be re-applied.

The bath is given daily until all burned areas are well debrided and cleansed. Patients seem to enjoy their bath even though they may feel fatigued afterward.
PART III: THE ARM BATH

One of the most common treatments on the unit is a daily whirlpool bath given to your arm or hand.

The arm bath is a portable whirlpool tank filled with warm water. The water may be an orange colour due to a medical solution added to the water. It is not rust.

The warm bubbling water stimulates circulation. Usually the treatment lasts 20 minutes.

The nurse will debride or remove the dead tissue from your wounds as well as cleanse them.
The warmth of the water and natural buoyancy enable you to exercise easily with supervision by the physiotherapist.

Your arm and hand are dried and dressings are re-applied.

The arm bath is usually given more than once a day. Most patients seem to enjoy the bath.
PART IV: SKIN GRAFTING

When the burn has destroyed deeper layers of skin tissue, the skin is not able to regenerate itself without some help.

Therefore, the doctor will remove a thin layer of skin from a healthy non-burn area of your body for application to a non-healing burn area. This procedure takes place in the operating room.

The skin graft is gently laid on the burn area. No stitches or dressings are required. The area is left exposed.

Because drainage and pus accumulate under the graft, the nurse must roll each graft with a "Q-tip" very frequently in order to remove this drainage. When the drainage quickly decreases in amount, frequent rolling is not as necessary.
The grafts are very delicate. Therefore, it is important that you remain in one position for a long period of time. Your doctor will discuss the approximate length of time.

The donor area from which the skin comes, is exposed to the air. It develops a dry brown scab and may be quite painful at first. As it heals, it may become itchy. It is important that you do not scratch this area.

The donor areas quickly heals and fades with time.

Your newly healed skin appears slightly discoloured for many months but will fade gradually. Scar tissue is usually minimal. You will be given an explanation and a booklet of instructions for skin care upon discharge.
PART V: SPLINTING

The physiotherapist may make special hand or leg splints which will be used during the early and later stages of burn care. Splints are made from mouldable plastic and may require frequent adjustment.

These are prescribed to maintain the affected joint in good position and to prevent tightening of the burned areas.

Initially they may be worn constantly except during treatment and exercise.

Later, they may be prescribed to be worn at night and while resting to provide good functional position.
PART VI: SURGICAL PINNING

Metal pins are sometimes inserted into an affected limb. These pins are screws placed through the bone and are thus held in place.

These pins prevent new skin grafts from rubbing off and maintain proper limb position during healing.

They can withstand your activity without breaking and without hurting. Although they look painful, the pins do not really hurt since bone has no pain nerves.
The nurse will cleanse the pinsites frequently and apply an ointment. This prevents infection and inflammation.

The length of time you are strung up varies. Feel free to discuss this with your doctor.
APPENDIX D
INTERVIEW FORMAT FOR EVALUATION OF THE INSTRUCTIONAL PROGRAM

A. Evaluation of the informative component:

Yes No

1. Do you understand why you are on "isolation"?

2. Do you know the degrees of burns and what degree of burn you have?

3. Do you know why your pain medications are changed periodically?

4. Do you know how your dressings are done?

5. Do you understand why debridement of your burns is necessary?

6. Do you know why it is necessary for you to exercise often?

7. Do you know why elastic stockings are applied on your healing legs?

8. Do you understand why good nutrition is important?

B. Evaluation of the support component:

Please rate the following questions on this scale

1 2 3 4 5
very helpful uncertain not helpful useful

How helpful did you find the tape-slide program? 1 2 3 4 5
How helpful did you find our discussion of the tape-slide program? 1 2 3 4 5
INTERVIEW FORMAT FOR EVALUATION OF THE INSTRUCTIONAL PROGRAM
CONTINUED -

C. Evaluation of the Burn Bath component:

1. Do you understand why the colour of the water is orange?
2. Do you understand why the water is bubbling?
3. Do you understand why removal of dead skin (debridement) is necessary?

D. Evaluation of the support component:

Please rate the following questions on this scale:

1. very helpful
2. helpful
3. uncertain
4. not helpful
5. useless

How helpful did you find the tape-slide program? 1 2 3 4 5
How helpful did you find our discussion of the tape-slide program? 1 2 3 4 5
E. Evaluation of the Arm Bath component

1. Do you understand why the colour of the water is orange?
2. Do you understand why the water is bubbling?
3. Do you understand why the removal of dead skin (debridement) is necessary?

F. Evaluation of the support component:

Please rate the following questions on this scale.

1 very helpful 2 helpful 3 uncertain 4 not helpful 5 useless

How helpful did you find the tape-slide program? 1 2 3 4 5
How helpful did you find our discussion of the tape-slide program? 1 2 3 4 5
INTERVIEW FORMAT FOR EVALUATION OF THE INSTRUCTIONAL PROGRAM CONTINUED -

G. Evaluation of the Skin Grafting component:

Yes   No

1. Do you understand why skin grafting is necessary?

2. Do you understand why the nurse must roll each graft with a "Q-tip" frequently?

3. Do you understand why you must remain in one position for a period of time?

4. Do you understand why you must not scratch an itchy donor area?

H. Evaluation of the support component:

Please rate the following questions on this scale.

1 2 3 4 5
very helpful uncertain not helpful useless

How helpful did you find the tape-slide program? 1 2 3 4 5
How helpful did you find our discussion of the tape-slide program? 1 2 3 4 5
INTERVIEW FORMAT FOR EVALUATION OF THE INSTRUCTIONAL PROGRAM CONTINUED -

I. Evaluation of the Splinting component:
   Yes    No
   1. Do you understand why you must wear splints?
   2. Do you understand why exercise is important when the splint is removed from your hand or leg?

J. Evaluation of the support component:

Please rate the following questions on this scale:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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</tr>
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<tr>
<td></td>
<td>very helpful</td>
<td>helpful</td>
<td>uncertain</td>
<td>not helpful</td>
<td>useless</td>
</tr>
</tbody>
</table>

How helpful did you find the tape-slide program? 1 2 3 4 5
How helpful did you find our discussion of the tape-slide program? 1 2 3 4 5
INTERVIEW FORMAT FOR EVALUATION OF THE INSTRUCTIONAL PROGRAM CONTINUED -

K. Evaluation of the Surgical Pinning component: Yes No
   1. Do you understand why pinning is necessary?
   2. Do you understand why frequent, cleansing of the pinsites are necessary?
   3. Do you believe that, although the pins look painful, they do not really hurt?

L. Evaluation of the support component:
   Please rate the following questions on this scale.
   
   1 very helpful 2 helpful 3 uncertain 4 not helpful 5 useless
   
   How helpful did you find the tape-slide program? 1 2 3 4 5
   How helpful did you find our discussion of the tape-slide program? 1 2 3 4 5
APPENDIX E
### SLEEP RECORD

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**Comments:**

**Key:**
- ✓ = awake
- O = asleep
- # = sleeping pill
- * = pain pill
- + = nursing task
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**Comments:**
NURSES ASSESSMENT OF PATIENT ANXIETY

1. Would you assess this patient's general personality as being:

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2. Under the effects of treatment stress, would you assess this patient as being:

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YOUR DAILY DIARY

The purpose of your diary is to keep a daily account of your reactions to your treatments. Your feelings and concerns are important to nurses. Although your diary will be confidential during your hospital stay, the researcher hopes to accumulate similar comments and concerns common in all patients in this study. This will help give the nursing and medical staff insight into the concerns of burn patients during their recovery.

INSTRUCTIONS:

1. Try to enter comments into your diary at the same time of day, every day, after your treatments -- perhaps from 4-6 p.m.

2. Try to think of 5 possible responses

1 2 3 4 5 6
strongly agree uncertain disagree disagree does not agree strongly apply

3. Circle the appropriate number.

4. In the space below each sentence, enter comments, as much as you feel necessary, describing how you felt during the day with regard to that particular topic.

DAILY DIARY

1. I found the dressings painful but tolerable today.

1 2 3 4 5 6
strongly agree uncertain disagree disagree does not agree strongly apply

Comments:
2. The pain does not seem as severe today.

1  strongly agree  2  uncertain  3  disagree  4  strongly disagree  5  does not apply

Comments:

3. I was afraid of my treatments today.

1  strongly agree  2  uncertain  3  disagree  4  strongly disagree  5  does not apply

Comments:
4. I feel that I don't need as many pain killers today.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree
6. does not apply

Comments:

5. I slept well last night.

1. strongly agree
2. agree
3. uncertain
4. disagree
5. strongly disagree
6. does not apply

Comments:
6. I was anxious today.

1 2 3 4 5 6
strongly agree uncertain disagree strongly disagree does not apply

Comments:

7. I am concerned about returning to my job or way of life.

1 2 3 4 5 6
strongly agree uncertain disagree strongly disagree does not apply

Comments:
8. I am concerned about my family.

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Comments:

9. I generally feel better today than I did yesterday.

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Comments:
10. I feel discouraged today because I can see no improvement.

1 strongly agree 2 uncertain 3 disagree 4 strongly disagree 5 does not apply

Comments:

11. If my general sense of well-being could be rated on a scale, with (1) being "poor" and (5) being "great!", today I am:

1 poor 2 fair 3 average 4 good 5 great!

Comments: